

**Report of the
Regional Co-ordination Meeting
for the North Sea and Eastern Arctic
(RCM NS&EA)
2015**

**7 AM Den Haag
Buitenhof 47, DEN HAAG, THE NETHERLANDS
31 August – 4 September, 2015**



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1. Executive summary

The RCM NS&EA met 31st August - 4th September 2015 at den Haag, Netherlands with 27 participants from 11 member states and autonomous regions attending, including representatives of ICES and the Commission. National correspondents from Spain, UK, Denmark, Lithuania, Germany, Sweden and the Netherlands were present. The meeting was co-chaired by Katja Ringdahl (Sweden) and Alastair Pout (Scotland).

The RCM N&SEA considered the recommendations from the 11th Liaison meeting and summaries were presented of the work of expert groups and end users for the 2014-15 period to the plenary session of the meeting. The expert groups included WGCATCH, PGDATA, WKISCON2, WKRDB 2014-01, RDB-SC, STECF and the Zagreb meeting on transversal variables. ICES, as a main end user, provided feedback.

A summary was presented of the progress in the regional coordination project (fishPi). This project involves over 40 participants from 12 member states from NS&EA, NA and Baltic regions, two external statistical experts, and ICES. The project has a wide scope of regional cooperation issues including sampling designs, data formats, code lists, PETS, stomach sampling, small scale and recreational sampling, and data quality software production. It has a budget of €400,000, and a one year time line and with a planned completion date of April 2016. A project with identical aims is running in parallel in the Mediterranean and Black Sea regions.

The majority of the ToRs of the RCM NS&EA were addressed by three subgroups: one concerned with data analysis, one with the landing obligation, and one with issues particularly related to role and work of national correspondents.

Data analysis sub group

The data analysis subgroup considered that the 2015 RCM data call was in large part well met with all NS&EA member states and countries providing data, all but 2 uploading successfully to the RDB. A notable feature of the response to the 2015 data call was the welcome addition, for the first time, of Spanish data. This enabled a far more complete picture of regional fisheries to be obtained and is a particularly welcome development in regional cooperation.

The completion of upload logs, designed at the 2014 RCM, was a considerable success. Most, though not all, countries fill them in and they highlighted a number of issues that will lead to the improving the process of RDB data submission.

Data analysis carried out by the subgroup, and ICES data centre, included some basic audits of the data within the RDB. This was supplemented by descriptions of fisheries within the region: NAFO area, Eastern Arctic area, northern North Sea demersal fisheries, southern North Sea flatfish and pelagic fisheries. Each of these descriptions included the identification of sampling frames of major landing harbours, the main national fleets by métier, the ranking of species tonnages, and maps of the fishing locations and landing ports.

Analysis of the landings abroad, and the extent to which the RDB held sampling data from flag vessels other than the landing country, showed that a considerable proportion of the landings (~23% by weight) are either not being sampled or the samples of this fraction cannot be uploaded to the RDB.

An analysis of the age data from the RDB was able to demonstrate the scope and the number of determined ages by species and country, and relate this to the proportion of the landings of the species concerned. While the number of age readings need not be directly related to the proportion of the landed catch, the findings are of interest in demonstrating potential for task sharing in age reading.

Landing Obligation subgroup

The landing obligation (LO) continues to raise major concerns for RCM participants.

The subgroup considered evidence of the effect of the LO on the recording of the unwanted landings, which have now officially been classed as landings with a presentation BMS (below minimum size). The experience of the LO for NS&EA fisheries is as yet limited to pelagic fisheries where there appears to be little change in the landed components of the catch. The experience of Denmark, Sweden and Germany of the implementation in the Baltic suggest that, in some situations the BMS fraction is being grossly under recorded in logbooks and/or is simply not available where the landing data are derived from sales notes and BMS fraction is not sold. An additional problem is that the figures that are available are hard to equate to known catch fractions. The subgroup considered this to be extremely concerning, considering control data derived from logbooks comprises some of the principal input data to maintain the time series of stock assessment models. Blurring the distinction between the different components of the catch increases the uncertainties around any catch estimates derived from the sampling programmes and undermines any potential advice in reference to catch options or effort management from the assessments using these data.

The subgroup reiterated the desirability of maintaining at-sea observer programmes as the only reliable means of generating estimates of catches, as recommended by the RCM NS&EA 2014 and endorsed by the LM 2014. Noting further that the landing obligation only applies to TAC species, and that therefore, information on discards of non TAC species will not be available without running observer programmes and full concurrent discard sampling. Such estimates are required to answer the requirements of the DCF to provide data for ecosystem impact and MSFD assessments.

RCM NS&EA also (again) highlight the need for national and international IT-systems and estimation procedures to be adapted to properly deal with the new BMS fraction of the catch. The issue is urgent and needs to be solved prior to data calls for 2015 data as the landing obligation already is in force for some stocks and in some areas.

A particular concern of the subgroup was also that throughout its discussions, RCM NS&EA was conscious that the opportunity had been lost for the Scheveningen Group charged with oversight of the discard plans for the North Sea region and the RCM to work in a coordinated manner to address the data collection issues arising from the landing obligation.

National Correspondent's sub group

A sub group of national correspondents of NCs was formed as part of the RCM NS&EA. This group considered it useful to have a forum where common experiences could be shared without the requirement for NC to act purely in a dissemination role. Of note where the consensus view that EMFF funding regime had, for a number of member states, made their funding position worse, and that in all cases it had imposed an unwelcome additional administrative burden. It was the consensus view of attending NCs that the population of the RDB was desirable and that a commitment to do so should form part of the nation programme. A number of issues relating to the harmonization of reference lists used by control agencies and other EU bodies were highlighted but there was no concern over the sharing control agency data, within and between member states. Some issues were also highlighted relating to the ability to define metiers, the recording of selection devices and the inadequate recording of under 10m fleet in logbooks.

The NCs subgroup noted the potential requirement for the distribution of the sampling commitments between member states might change considerable under regional sampling design, hence the obligations and of necessity the funding at national administration level. To that end it was suggested that a review of the current financial obligations, in relation to stock exploitation and TAC, would be a useful resume on which any such debate can be framed.

The cost sharing model for two surveys (International Blue Whiting Spawning Survey and International Ecosystem Survey in the Nordic Seas) proposed in 2014 was suggested as the basis for other surveys, it being noted that TAC share would be a simpler and more robust measure of a national contribution, than the stock exploitation.

Future work of the RCM and RCGs

The role of the RCM and RCG was discussed in plenary. The role and composition of RGC groups was identified to be mainly that of intercessional working groups, coalescing to cover particular needs and with the participants required for tasks. The structure of the groups could vary from ad hoc groupings to a more formalised membership, cooperating over differing time scales depending on the particular tasks they were to address. They would have a reporting role to existing RCM and/or a putative supra-regional body. To that end the issues involved in the merging of the NSEA RCM and the NA RCM were considered, with many parallel processes being noted. The need of national scientific institutes to commit the person time to the RCG process was identified as a key aspect of the evolution of the RCG process. Funding the RCG process was discussed. The existing experience of the direct funding channels was noted as being administratively very inefficient, and the pooling of EMFF funding from national workplans was untried, and potentially fraught with complications.

The RCM NSEA expressed in the strongest terms that the short term needs of regional cooperation were dominated by the overwhelming need to fund work related to the RDB, emphasising the the RDB was not simply a data base, but also a means of facilitating the data analysis, skills, dissemination of best practices, and harmonisation of work involved in regional data collection and estimation. As such it is much more than an investment in the regional cooperation process as the tangible structure of the RDB as housed by the ICES data centre. It was emphasised that key requirements of data collection, such as the ability of member states to evaluate the impact of the landing obligation, are very largely dependent on such development funding. The role of the commission in facilitating this process was stressed repeatedly

2. Introduction

2.1 General

The RCM NS&EA met in Den Haag (The Netherlands) between 31 August and 4 September 2015. It was the 12th meeting of the group. RCM NS&EA appreciates the facilities offered by the Dutch organizers. The availability of SharePoint offered by ICES proves to be very efficient in organizing the work before, during and after the meeting.

The Terms of Reference for all the RCM have been made in cooperation between the Commission and the chair of the RCMs. The RCM for the Baltic and the RCM for the North Sea & Eastern Arctic have agreed to use the same template for the reports for the two RCMs in order to ease the subsequently work at the Liaison Meeting and by the fisheries data collection community.

This year most MS partitioning in RCM NS&EA have uploaded data for 2014 to the RDB FishFrame according to the official data call. One MS provided data through a server instead. This caused extra work prior to and during the meeting. Access to all did however considerably increase knowledge of fisheries and sampling within the region.

The meeting dealt with all terms of reference and considered whether there was a no regional need to adjust the National Programmes (NP) for 2016.

Most of the work was done in plenary but also in 3 subgroups.

Previous RCM meetings focused on developing examples of how quality of data could be demonstrated on a regional level making use on data provided by Member States (MS) in a Regional Data Base (RDB). This year, a process, has been proposed, how to deal with the quality control of national sampling data and reporting of data quality on a regional level in the future. The work has been carried out in subgroup A.

The new Common Fishery Policy (CFP) has introduced an obligation to land all catches of quota species. This means that undersized fish species allocated by quota, which previously were discarded needs to be landed and reported. The landing obligation will become effective to cod, salmon, herring and sprat in the Baltic from 2015, for pelagic fisheries and industrial fisheries in 2015 in other regions and in demersal fisheries in 2016. The landing obligation may have a big impact on the biological sampling of the catches. Subgroup B considered the impact of the landing obligation on the sampling programmes and the consequences for regional sampling coordination.

Issues related to national administrations were discussed in a subgroup consisting of National Correspondents.

Under the new CFP a revised Data Collection Framework will become operative. The programme has not been defined yet. It is foreseen that data collection programmes will be set up on a regional level, taking better into account the data needs from end-users like ICES, STECF, ICCAT, GFCM, etc. This requires a different kind of coordination. It was discussed in plenary how coordination of data collection could be organised in an effective way under the revised DCF.

2.2 Background & legal requirements

The EU Data Collection Framework (DCF; EC 2008a, 2008b, 2008c, 2010) establishes a framework for the collection of economic, biological and transversal data by Member States (MS). This framework provides the basic data needed to evaluate the state of fishery resources and the fisheries sector and the impact of the fisheries on the marine ecosystems.

The Regional Coordination Meeting for the North Sea & Eastern Arctic proceeds from the present Data Collection Framework (EC Regulation no. 199/2008) is establishing a community framework for the collection, management and use of data in fisheries sector for scientific advice regarding the CFP. According to this regulation and without prejudice to their current data collection obligations under EU law, MS shall collect primary biological, technical, environmental and socio-economic data within the framework of a multi-annual national programme drawn up in accordance with the EU programme.

According to EC Regulation 665/2008, laying down detailed rules for the application of Council Regulation (EC) 199/2008, and its technical Decision 2010/93/UE specifying practical aspects for data collection, actions planned by MS in their national programme shall be presented according to the predefined regions.

The coordination of the data collection are carried out at a regional level and specific Regional Coordination Meetings (RCMs) are in charge of facilitating this and these meetings aim to identify areas for standardisation, collaboration and task sharing between MS. RCMs are held annually and involve participants from each MS involved in the DCF.

At present, five RCMs are operative: 1) The Baltic Sea (ICES areas III b_d), 2); The North Sea & Eastern Arctic (ICES areas IIIa, IV and VIIId), (ICES areas I and II), (ICES divisions Va, XII & XIV and the NAFO areas. 3); The North Atlantic (ICES areas V_X, excluding Va and VIIId); 4) The Mediterranean Sea and the Black Sea and 5) Long distance fisheries: regions where fisheries are operated by Community vessels and managed by Regional Fisheries Management Organisation's (RFMO) to which the Community is contracting party or observer.

The regional split over 5 regions allows for coordination while taking into account regional aspects and specific problems. Regional Coordinating Meetings (RCMs) are held annually and involve National Correspondents and both biologists and economists from each MS involved in the DCF programme. The key objectives of the RCMs are to identify areas for standardisation, collaboration and co-operation between MS.

A Liaison Meeting (LM) between the chairs of the different RCMs is being held annually to analyse the RCM reports in order to ensure overall co-ordination between the RCMs.

Within the DCF, the role of the RCMs and their tasks in regional coordination are clearly defined in various articles of the Council regulation.

Council Regulation 199/2008 Article 5: Coordination and cooperation

1. Member States shall coordinate their national programmes with other Member States in the same marine region and make every effort to coordinate their actions with third countries having sovereignty or jurisdiction over waters in the same marine region. For this purpose the Commission may organise Regional Coordination Meetings in order to assist Member States in coordinating their national programmes and the implementation of the collection, management and use of the data in same region.

2. In order to take into account any recommendation made at regional level at the Regional Coordination Meetings, MS shall where appropriate submit amendments to their national programmes during the programming period. Those amendments shall be sent to the Commission at the latest two months prior to the year of implementation.

Commission Regulation 665/2008 Article 4: Regional co-ordination

1. The Regional Coordination Meetings referred to in Article 5(1) of Regulation (EC) No 199/2008 shall evaluate the regional co-ordination aspects of the national programmes and where necessary shall make recommendations for the better integration of national programmes and for task sharing among MS.

2. The Chair(s) of the meeting shall be designated by the Regional Coordination Meeting in agreement with the Commission for a two year period.

3. The Regional Coordination Meetings may be convened once a year. The terms of reference for the meeting shall be proposed by the Commission in agreement with the Chair(s) and shall be communicated to the national correspondents referred to in Article 3(1) three weeks prior to the meeting. Member States shall submit to the Commission the lists of participants two weeks prior to the meeting.

2.3 Terms of Reference

1. Review progress since 2014 following up the 11th liaison meeting report
2. Review feedback from end users, and expert groups, to include: GFCM WG on DCRF, WGCATCH 2014, RDB SC and WKRDB 5, PGDATA, PGMED, STECF, WKISCON2, ICES (main issues to be clarified), WK on trans variables, Zagreb 2015), NC meetings (presented by the commission).
3. Regional data collection, analysis and storage and the evolution towards RCGs.
 - a) Consider the progress of the "strengthening regional cooperation in data collection" mare/2014/19, and possible implications.
 - b) Review progress in data quality screening, harmonisation of national and regional data checking procedures.
 - c) Consider the role of the sampling data format in terms of integration of sampling data collection, recording and the present and future RCM data calls
 - d) Consider the data collection protocols for at-sea and on-shore sampling in the context of regional sampling designs and probability selection methods.
 - e) Discuss design-based sampling: state of play of which MS are using it or plan to use it.
 - f) Analyse the RCM data call for the RDB 2014 data (analysis to be done as much as possible prior to the meeting, and the type of analysis e.g. ranking of ports to sample, to be determined beforehand).

- g) Identify the areas and topics where there is a need for intra-institute intersessional work to achieve coordinated sampling, and how such groups can be organised, coordinated, and funded e.g. joint surveys, sampling plans for MSFD variables, data quality scrutiny groups, international sampling frames.
4. Review proposal for task sharing and criteria for joint surveys.
5. Identify any amendments to NP needed in 2016.
6. Consider future funding mechanisms to continue strengthening regional cooperation
7. Landing Obligation.
 - a) Evaluate the impact of the introduction of the landing obligation, and/or preparations for its implementation.
 - b) The operation of at-sea observer programmes, and role of scientific observers.
 - c) Quality and integrity of catch data collected by the control agencies, i.e. logbook sales notes data.
 - d) The generation of catch estimates derived from sampling programme data.
 - e) Experiences of on-shore sampling of landed discards.
 - f) Review progress from last year's recommendations
8. National Administrations
 - a) Address any issues relating specifically to national administrations and consider the role of NC within the RCM RCG context.
 - b) Harmonisation of control agency data collection, and the cross border sharing of control agency data, for vessels operating and landing outside their flag country.
 - c) Harmonisation of catch data recording e.g. metiers.
 - d) The position of national administrations on populating the Regional Data Base according to the RCM data call with i) Landings and effort data and ii) Sampling data.
 - e) Task sharing and task trading mechanisms that might operate within the context of a regional sampling designs.
9. Metiers.

Discuss the role of metiers in sampling and estimation, as descriptors of fishing, as domains for estimation and their merging in the InterCatch, the RDB and the STECF data base and as an aide to sampling. Define how they are to be used in the future, the extent to which national and regional lists need to be harmonised and how lists are to be stored for use in a regional context.
10. Future multi-annual programme for data collection
 - a) Propose list of research surveys that should be carried out in the region in 2016.
 - b) Review and comment on ICES advice on what data are necessary for scientific advice regarding recreational fisheries
 - c) Review and comment on list of proposed stocks& biological variables to be included in EU MAP. (The Commission will provide background documents/input for this ToR)
11. Any other business

2.4 Structure of the report

The following table lists the sections in the report where the various T.o.R. have been addressed.

T.o.R	Section
1	3
2	4
3	5 and 6
4	8

5	9
6	10
7	11
8	12
9	13
10	14
11	15

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3. Progress in regional co-ordination since 214 following up the 11th Liaison Meeting outcome

The delayed adoption of the revised DCF has also delayed the introduction of the new Regional Coordination Groups (RCG). In 2013, the Commission decided to roll-over the National Programmes from the Member States for 2011-2013 unchanged to the period 2014-2016.

The RDB has been populated through data calls set out by the RCM chairs. The database has increased the common understanding of the fisheries and the sampling in the regions. RCM tasks such as analysis to underpin sampling designs within a region and overviews of sampling that have been carried out have been much less time consuming since the introduction of the RDB. The foreseen movement from national sampling programmes to regional ones as well as implementation of statistically sound sampling and estimation, require further development of the RDB. Without such development it is difficult to utilize the full potential of the database, which in turn has an impact on the scope and speed in the development of regional programmes.

The chairs of the RCMs cooperated in the formulation of a common data call for 2015 and preparing the terms of reference of this meeting.

3.1 Follow-up of recommendations from the 2014 Liaison meeting

The 11th Liaison meeting (November 2014) considered all recommendations made by the RCMs and PGECON. These recommendations are listed below. The Liaison meeting identified overlap between some recommendations made by the different RCMs and decided to merge these. Note that the recommendations 1-6 are merged and composed from elements provided by several RCMs.

The recommendations are complemented comments from the RCM NS&EA 2015 in the field 'follow up in 2014-2015'.

LM 1. Regional Database – Consultation of RCMs	
RCM Baltic and RCM NS&EA 2014 Recommendation 1	RCM NS&EA recommends that the RCMs are consulted before the Commission takes decision on future database structure for DCF data and that the future RCG needs are properly considered
Justification	The RDB is the backbone in present regional coordination of data collection between MS and the RCM Baltic foresee that the importance of a well-functioning database adapted to the needs of the regional coordination group will be even more crucial in the future when moving towards regional programs, design based approach as well as stronger focus on quality assurance and end-user interactions. It is thereby of urgent importance that the RCM needs are carefully considered when the Commission choose system for storage and management of DCF data.
Follow-up actions needed	COM to properly consult RCMs before decisions are taken on future database structures and to properly consider RCM/RCG needs
Responsible persons for follow-up actions	European Commission
Time frame (Deadline)	2014
LM comment	The Commission has committed to consult the RCMs
Follow up – RCM NS&EA 2014-2015	The European Commission consulted the RCMs (as well as other parties) on the outcome of the feasibility study “Scientific data storage and transmission under the future Data Collection Framework”. The conclusion of the study was that scenario four “the fisheries hub” is the best solution for future database need. This scenario is to a large extent similar to the present situation with regional databases and was the one favoured by RCM NS&EA. No further action is needed for the time being.

LM 2. Implications of the landing obligation - Scientific data collection and at-sea sampling	
RCM NS&EA 2014 Recommendation 2	RCM NS&EA recommends that MS maintain scientific observer programmes and continue at-sea sampling schemes for the collection of scientific data for stock assessment and advice. Additionally that the role of scientific observer is not conflated with any monitoring role. Appropriate modifications to at-sea sampling protocols and recording should be devised for sampling the retained discard fraction.
Justification	<p>Discarding will become illegal for the most part, and this has the potential to disrupt the historical time series of catches used in assessment models.</p> <p>Nevertheless, at-sea sampling needs to be maintained because discards at-sea will continue for various non TAC species and exemptions allowed under the landing obligation. Additionally the landing obligation will introduce a new category of retained discards and this fraction has to be sampled to obtain scientific data for the complete catch composition. Until such time as the feasibility of sampling this catch component on-shore can be determined there is a need to maintain at-sea sampling.</p> <p>The RCM NS&EA underlines the importance of maintaining statistically sound sampling designs for the on-board observations, and the integrity of scientific observers.</p>
Follow-up actions needed	<p>Scientific institutions to prepare sampling protocols appropriate for at-sea sampling of the retained fraction and the extra fraction (landing part for industrial purpose of fish under the minimum reference size) due to the landings obligations and modify their sampling protocol .</p> <p>MS & ICES to consider if modifications are needed for recording, storage and estimation processes (data exchange format, IT systems, ...)</p>
Responsible persons for follow-up actions	Scientific institutions within MS
Time frame (Deadline)	Prior to the implementation of the landing obligation
LM comments	The LM fully support this recommendation and in addition that the ICES WGCATCH (November 2014) explore sampling strategies which can be applied under the landing obligation management regime including sampling of the landing fraction of the catch which previously was discarded. LM recommends to MS to follow the guidelines provided by WGCATCH.
Action – RCM NS&EA 2014-2015	<p>This issue was addressed in section 4 of the WGCATCH 2014 report: Provide advice on adapting sampling protocols to anticipated changes in management measures (e.g. discard ban) or technical advances in monitoring</p> <p>RCM NS&EA 2015 continue to stress the importance of observer programmes during the implementation of the landing obligation. See section 11</p>

LM 3. Implications of the landing obligation - Scientific data storage, IT systems and estimation	
RCM NS&EA and RCM NA 2014 Recommendation 3	RCM NS&EA recommends that scientific institutions and ICES ensure that data recording systems, IT systems and estimation routines are able to appropriately deal with the retained discard fraction. Also, authorities should adjust logbooks and IT systems to accommodate the accurate recordings of all catch components, including the part that can be released under the de minimis exemptions.
Justification	<p>The landing obligation will introduce a new category of retained discards and this fraction of the catch will require to be estimated. This necessitates that within national institutions and ICES all stages of the recording, storage and estimation processes are able to accommodate this fraction.</p> <p>Many national IT systems may have data models based on a distinction between landed and discarded data that will require modification to accommodate retained discards fraction. Routines to estimate national catch compositions for length and age for assessed stocks will need to be adjusted. The ICES InterCatch system and the regional data base may be similarly affected.</p>
Follow-up actions needed	Scientific institutions and ICES data centre to consider if present systems are appropriate and if not make the required modifications.
Responsible persons for follow-up actions	Scientific institutions within MS & ICES National and EU authorities
Time frame (Deadline)	Prior to the introduction of the landing obligation, January 2015 for pelagic stocks and January 2016 for demersal stocks.
LM comments	LM agrees in principle but recognises that no action can be taken until the implementation of the landing obligation is specified. The LM though suggests that MS consider how the new data sets can be accommodated in their scientific data bases.
Action – RCM NS&EA 2014-2015	RCM NS&EA repeats the recommendation from last year that scientific institutions and ICES need to ensure that data recording systems, IT systems and estimation routines are able to appropriately deal with the new BMS (fish landed below MCRS) fraction (see section 11.8

LM 4. Implications of the landing obligation - Monitoring catch data collection	
RCM NS&EA 2014 Recommendation 4	RCM NS&EA recommends that monitoring catch data collected by control agencies should be maintained and enhanced to account for the additional need to assess the impact of the landing obligation. Specifically the logbook system should be able to record continuing discards and the retained discard fraction as well as the landed fraction. Selective gear measures adopted by vessels should be recorded in logbooks.
Justification	<p>The landing obligation will herald significant changes in the behaviours of fishers, fishing practices, and will most likely result in a proliferation of the use of more selective gears. There will also be requirements to record continuing discards, retained discards and the landed fraction of the catch.</p> <p>If these changes are not adequately recorded in the official catch monitoring data then the ability to make inference from scientific samples to fishing fleets will be limited. The better the accuracy and integrity of the monitored catch data the better are the estimates of the total catch.</p>
Follow-up actions needed	Commission, European and national control agencies to consider the adequacy of catch monitoring procedures.
Responsible persons for follow-up actions	Commission, European and national control agencies
Time frame (Deadline)	Prior to the introduction of the landing obligation
LM comments	LM support this recommendation and suggests that the Commission address this to the MS and that the issue is taken into account when evaluating and approval process of the discard plans.
Action – RCM NS&EA 2014-2015	Expected impact on the quality of catch statistics following the introduction of the landing obligation where discussed during RCM NS&EA (see section 11). The need to track landed fish below reference size where particularly expressed. It is recommended that IT systems are adapted to take this new catch fraction into account.

LM 5. Quality assurance – Agreed metiers and updated list	
RCM NS&EA 2014 Recommendation 6	RCM NS&EA recommends to update the list of metiers
Justification	After analysis of data uploaded to the RDB by MS in 2014, there were nearly 118 new metiers identified, which do not correspond with the reference list of metiers agreed during the RCM NS&EA in 2013. In the purpose of coordination of sampling activities in relation to key metiers at regional level, it is fundamental that the code list in the regional data base is unambiguous and corresponds with the reference list.
Follow-up actions needed	RCM NS&EA to update the list of metiers including detailed description of each. These lists should be implemented in the RDB. It should not be possible to upload data for metiers outside the list without permission from the RCM chair. The updated table of metiers should take all metiers standardized and accepted by RCMs over the last years into account.
Responsible persons for follow-up actions	RCM NS&EA
Time frame (Deadline)	Intersessionally by correspondence
LM comments	LM endorses this recommendation.
Action – RCM NS & EA 2014-2015	Metier lists by region where updated prior to the data call. Metier lists by region needs to be examined and updated by the RCMs every year.

LM 6. Quality assurance – Tools to analyse the data uploaded to the RDB	
RCM NS&EA 2014 Recommendation 7	RCM NS&EA recommends to develop tools to analyse the quality and the status of completeness of the data in the RDB
Justification	It is presently difficult to access the completeness of data uploaded to the RDB. Knowledge of the status of data is essential to RCM work. Reports and tools allowing the RCMs to examine completeness thereby need to be developed. In order to ensure information on the status of the data uploaded to the RDB is available for the data user, it is further suggested that facilities to mark the status of the various data type uploaded the RDB.
Follow-up actions needed	RCM NS&EA to list the needs for evaluating the quality and the status of completeness of the data in the RDB
Responsible persons for follow-up actions	RCM NS&EA
Time frame (Deadline)	As soon as possible
LM comments	The LM endorses this recommendation and stress the importance of the further development of such tools. The development of the requested tools is part of the roadmaps towards the implementation of the revised DCF and are included a study proposal. Therefore, the LM recommends that the study proposal will be funded as soon as possible.
Action – RCM NS&EA 2014-2015	Discussions are ongoing to conclude what analyzes that would be most relevant to perform. Besides, discussions are underway by whom these analyzes should be performed. During RCM 2015, this issue will be dealt with further in the sub-groups.

LM 7. Quality assurance - Calibration of age readings	
RCM Baltic 2014 Recommendation	RCM recommends that WGBIOP develop a procedure for an annually intermediate calibration
Justification	To make sure on a regular basis that age reading is done in a consistent way and that a reference set is available for age readers before the start reading a new seasons of otoliths. WebGr could be used as a tool for uploading pictures on otoliths. All experts involved in the age reading for the specific stock should participate in the exercise which should be performed annually for all stocks
Follow-up actions needed	WGBIOP to look into a standard procedure
Responsible persons for follow-up actions	ICES WGBIOP
Time frame (Deadline)	Next WGBIOP meeting to be held in August - September 2015.
LM comments	LM endorses this recommendation
Action – RCM NS&EA 2014-2015	It was noted that WGBIOP had not yet taken place.

LM 8. Quality assurance – More detailed logbook registration	
RCM Baltic 2014 Recommendation	RCM Baltic recommends that all fishermen fishing in the Baltic region document their catches on haul by haul basis in the logbook.
Justification	The introduction of the new CFP (article 15) will probably change the approaches to monitoring the fishery with the current scientific observer sampling programmes and the control of the fisheries. To ensure quality in catch data a more detailed registration of catches is necessary and this can be implemented by document the catches on a haul-by-haul basis in the official logbooks.
Follow-up actions needed	
Responsible persons for follow-up actions	Commission / BALTFISH
Time frame (Deadline)	Before the 1st of January 2015
LM comments	LM endorses this recommendation
Action – RCM NS&EA 2014-2015	Not relevant

LM 9. Concurrent sampling	
RCM NA 2014 Recommendation 1.	The RCM NA recommends that a comprehensive evaluation of the utility of the data being collected with the concurrent sampling should be performed.
Justification	It is unclear whether the significant resource needed to carry out concurrent sampling provides benefits that outweigh the costs. Some ICES Working groups have benefited from concurrent sampling data collected however there is no empirical evidence to support this. In order to decide if concurrent sampling should continue, more feedback from end-users is required.
Follow-up actions needed	<ol style="list-style-type: none"> 1. MS should carry out the evaluation on their own data collection schemes and report back to the RCM NA. 2. ICES to setup a workshop proposal to see the implication to the stopping the concurrent sampling for those stocks and benefits concurrent sampling are providing or can provide considering the new and broader scopes of the revised DCF, such as the evaluation of impacts of fisheries on marine biological resources and on the ecosystem.
Responsible persons for follow-up actions	<ol style="list-style-type: none"> 1. MS, RCM NA 2. ICES
Time frame (Deadline)	<ol style="list-style-type: none"> 1. MS: Intersession work with results reported to RCM NA 2015 2. ICES: Workshop to take place in 2015.
LM comments	The LM endorses this recommendation.
Action – RCM NS&EA 2014-2015	RCM NS&EA supports the overall conclusion from WKISCON2 stating that sampling the full range of species should be the future aim when moving towards 4S in the commercial sampling. Further, a strict stock based sampling is not an option to take into account again.

LM 10. Quality assurance – RDB data corrections	
RCM NA 2014 Recommendation 2	<p>The RCM NA recommends that</p> <ol style="list-style-type: none"> 1. the reference lists for metiers, harbours and species in the RDB are restricted to the agreed lists (metiers: RCM metier lists, harbours: EU Master Data Register, species: AphiaID (WoRMS)); 2. any data that cannot be uploaded should be recorded on a standard upload log distributed with the data call; 3. MS reload all their data in reference to the restricted lists.
Justification	<p>There are inconsistencies and errors in the data on the RDB that have been caused by non-restrictive reference lists for metiers, harbours and species, and insufficient data checks by MS. The annual data checking procedures that are currently carried out at RCMs reveal these errors and data gaps, limiting the potential for data analysis.</p> <p>A log of data completeness is needed so that users can assess the limitations of the data and therefore what interpretations or analysis can be done with it. Currently it is unclear how the data can be used.</p> <p>The RDB will be developed to record the status of the data within it, but until this feature is available a standard log submitted at the time of each data call can provide RCGs and data users with a reference to what data is <u>not</u> on the system as well as what is.</p>
Follow-up actions needed	<ol style="list-style-type: none"> 1. RCMs to provide ICES, as the RDB administrators, with the restricted reference lists. ICES needs to incorporate these lists in the RDB; 2. RCM chairs to include upload log in data call 2015; 3. MS need to reload their data (ICES needs to delete all the data first) and complete the log and submit it to RCM chairs. These logs should be made available for analysis at the next RCMs.
Responsible persons for follow-up actions	<ol style="list-style-type: none"> 1. RCMs, ICES (Data Centre) 2. RCM chairs 3. MS, ICES (Data Centre)
Time frame (Deadline)	<ol style="list-style-type: none"> 1. Reference lists: before RCM data call 2015 2. Upload log: to include in data call 2015 3. Reloading of data and submitting of upload log to RCM chairs: by deadline specified in data call 2015
LM comments	<p>The LM endorses this recommendation. Based on the progress done in the RDB –considering no fundings are expected immediately- RCM chairs will considerate in the moment of launching the Data Call if a complete reload –all year series- or current year is needed.</p>
Action – RCM NS&EA 2014-2015	<p>The work is in progress. Corrections of the reference lists for métiers and harbours respectively are successfully finished. The species reference list is being processed.</p>

LM 11. Enlarge PGMed scope to Large Pelagics	
RCM MED&BS-LP 2014 Recommendation LP sub-group	<p>Considering the new configuration taken in place in 2014 with LP subgroup associated to RCM MED&BS within a RCM MED&BS-LP, the LP subgroup recommend to enlarge PGMed ToRs to take into account LP subgroup. The list of ToRs are annexed in this report (annex 3)</p>
Action – RCM NS&EA 2014-2015	<p>Not relevant for the RCM NS&EA</p>

LM 12. Coordinated PGMed and LP data call	
RCM Med & BS-LP 2014 Recommendation LP sub-group	<p>The data required each year by the PGMed should be collected within the framework of a data-call defined by the following elements:</p> <p>Content: The content is defined according to the ToRs, which can now include issues specifically dedicated to the Large Pelagics subgroup or relevant to both groups.</p> <p>Format: For generic ToRs the format of the data will be similar to the format contained within the templates, spreadsheets and text files, used until now. <u>For the CV computations and investigation of sampling consistency</u>, the data will be collected to be consistent to the Standard Data Exchange Format (SDEF) proposed by the Large Pelagics subgroup, allowing to use the same tools and methodology for a more thorough investigation of sampling stratification and precision.</p> <p>Dates: The start and end dates of the data-call are set-up so that member states have time and flexibility for answering it, while complying with the 6 months period after the end of data collection during which data cannot be required. It has been agreed to launch the data-call the 1st of March and to set the deadline to the 15th of July.</p> <p>Person in charge: The chairs of the RCM MED&BS-LP will be responsible for launching the data-call.</p>
Action – RCM NS&EA 2014-2015	<p>Not relevant for the RCM NS&EA</p>

LM A2.			<i>AGREEMENT</i>
Quality control documentation			
RCM	NS&EA	2014	It is agreed that all MS attending the RCM NS&EA will document their data checks and quality control procedures in reference to the data capture and data processing stages of their national sampling programmes.
Agreement 1			
Justification			In order to develop a comprehensive set of data checks in the RDB and in addition also can be implemented in MS national data bases it is suggested to assemble information of all present data quality checks used by MS.
Follow-up actions needed			ICES to develop an easier procedure for comparing the data.
Responsible persons for follow-up actions			MS within RCM NSEA
Time frame (Deadline)			RCMs 2015
LM comments			The LM fully support this agreement and suggest that this work is done in all regions and by all RCMs.
Action – RCM NS&EA 2014-2015			This agreement is being addressed through work package 4 of the FishPi project.

LM A3.			AGREEMENT
Regional Coordination - Cost sharing of International Ecosystem Survey in Nordic Waters and Blue Whiting joint research surveys			
RCM Agreement 2	NS&EA	2014	RCM NS&EA 2014 agreed that the cost sharing model where those MS having a EU-TAC share >= 5% is sharing the survey cost according to their EU-TAC shares for the main species concerned: i) the International Ecosystem Survey in the Nordic (Atlanto-Scandian herring), ii) the Blue Whiting Survey (blue whiting). This model will be used for the International Ecosystem Survey in the Nordic Seas (IESNS) carried out by the Danish R/V Dana and the Blue Whiting Survey carried out by the Irish R/V Celtic Explorer and the Dutch R/V Tridens for years 2014 and 2015 or until a new data regulation is in place.
Justification			There is a need to update current agreements to reflect the new financial structure under the EMFF, while the surveys themselves are automatically rolled-over to 2014 and 2015 under the current DCF regime. Furthermore, the cost sharing models for both surveys should be aligned.
Follow-up actions needed			Approved by National Correspondents from Belgium, Denmark, Germany, the Netherland, Sweden and UK. The NC's from Ireland, France, Portugal and Spain should at the RCM NA be consulted.
Responsible persons for follow-up actions			The RCM NS&EA and the RCM NA
Time frame (Deadline)			Invoices should be sent to the MS concerned before 1 November 2014.
Follow up in 2014			The NC's concerned from the RCM NA to be consulted.
LM comments			LM endorses this agreement

Action – RCM NS&EA 2014-2015	Progress on this issue has been made
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4. Feedback from end-users and expert groups

4.1 ICES general feed-back

2015 recommendations to RCM North Sea and Eastern Arctic

From WGBYC - Working Group on Bycatch of Protected Species

Sampling under the current DCF can contribute to the assessment of bycatch of PETS, but is largely insufficient on its own as currently implemented by Member States. An assessment carried out by WKBYC (2013b) showed that bottom trawling is generally relatively oversampled with respect to monitoring of protected species bycatch, while in some specific fishing areas set-nets, longlines, and purse-seines are under sampled. For seabirds priority should be given to monitoring in trammel nets and set gillnets in the Baltic, North Sea, and North Atlantic, and in set longline fisheries in the Atlantic and Mediterranean/Black Sea.

From WGHANSA - Working Group on Anchovy, Sardine and Horse Mackerel

The WGHANSA recommends a pelagic survey to be carried out on an annual basis in spring in the English Channel (VIId, VIIe) to provide information on the status of small pelagics (particularly sardine and anchovy) in that region.

Feedback from ICES on recommendations, relevant for RCM NS&EA, from the Liaison Meeting (2014)

Four recommendations from the Liaison meeting are considered relevant for RCM NS&EA and these recommendations have been considered by ICES and are listed below:

LM 2. Implications of the landing obligation - Scientific data collection and at-sea sampling

This was addressed in section 4 of the WGCATCH 2014 report: Provide advice on adapting sampling protocols to anticipated changes in management measures (e.g. discard ban) or technical advances in monitoring

LM 3. Implications of the landing obligation - Scientific data storage, IT systems and estimation.

ICES reiterated that it will not be in the position to evaluate the implications the policy on the stock assessments until data and information on landings and discards become available.

For the time being the catch options conducted by ICES assumes a constant selectivity and that this might not be what will occur in the fishery.

Terminology used in ICES advice: “Wanted catch” is used to describe fish that would be landed in the absence of the EU landing obligation. The “unwanted catch” refers to the component that was previously discarded.

LM 7. Quality assurance - Calibration of age readings

WGBIOP meeting will take place between the 7th and 11th of September 2015.

LM 9. Concurrent sampling

A specific workshop was setup, WKISCON2. The draft report was available at the time of the RCM NSEA meeting and a summary is outlined in the section “Main outputs from WKISCON2: Workshop on Implementation Studies on Concurrent Length Sampling” of this report

ICES Benchmarks

ICES presented the current ICES Benchmark Process (ACOM 2014) and provided a proposed list of NS&EA stocks that will be benchmarked in 2016 (8) and 2017 (3; Table 4.1). As the benchmarked stocks require additional data compared to typical update stock assessments, the RCM highlighted that ICES assessment working groups should be mindful of the additional workload on data submitters and to keep data requests realistic and parsimonious. The RCM also requested that lines of communication between ICES assessment working groups, ICES Secretariat, and data submitters are maintained to ensure nobody is caught off guard with data requests.

Table 4.1 Proposed stocks for ICES benchmark

Year	Stock
2016	Saithe (<i>Pollachius virens</i>) in Subareas IV and VI and Division IIIa (North Sea, Rockall and West of Scotland, Skagerrak and Kattegat)
	Witch (<i>Glyptocephalus cynoglossus</i>) in Subarea IV and Divisions IIIa and VIId (North Sea, Skagerrak and Kattegat, Eastern English Channel)
	Norway lobster (<i>Nephrops</i> spp.) in Division IIIa (Skagerrak and Kattegat)
	Norway Pout (<i>Trisopterus esmarkii</i>) in Subarea IV and Division IIIa (North Sea, Skagerrak and Kattegat)
	Norway lobster (<i>Nephrops</i> spp.) in Division IVa, FU 32 (Northern North Sea, Norwegian Deep)

	Dab (<i>Limanda limanda</i>) in Subarea IV and Division IIIa (North Sea, Skagerrak and Kattegat)
	Whiting (<i>Merlangius merlangus</i>) in Division IIIa (Skagerrak and Kattegat)
	Sandeel (<i>Ammodytes</i> spp.) in Divisions IIIa, IVa, and IVb, SA X (Skagerrak and Kattegat, North and Central North Sea)
	Herring (<i>Clupea harengus</i>) in Subareas I, II, V and Divisions IVa and XIVa (Northeast Atlantic) (Norwegian spring-spawning herring)
2017	Plaice (<i>Pleuronectes platessa</i>) in Subarea IV (North Sea) and Division IIIa (Skagerrak)
	Cod (<i>Gadus morhua</i>) in Division IIIa East (Kattegat)
	European sea bass (<i>Dicentrarchus labrax</i>) in Divisions IVbc, VIIa, and VIId–h (Irish Sea, Celtic Sea, English Channel, and southern North Sea)

Feedback on 2014-2015 data transmission

ICES assessment working groups provided feedback on the 2014 Data Call for the data submitters and National Correspondents. In this table, data issues are described for each stock and weighted according to severity (i.e., low, medium, or high). The RCM suggested additional columns for “Due date” and “Uploaded date” to further communicate how long past due data may have been, which may further elaborate the severity of transmission issues. Further, the RCM suggested that feedback be directed at specific countries.

Feedback on 2014-2015 data call

ICES Secretariat has requested National Correspondents to report their views and suggestions on the 2014-2015 data call. Although this request was not issued in time for the RCM NS&EA, a brief dialogue occurred. Additional discussion has been suggested for the Liaison Meeting (October 2015). The RCM reiterated that requests from ICES assessment working groups should be as specific as possible (e.g., a request for “effort data” is useless without a specific way to calculate this value), limited to only necessary stocks (e.g., data for “all stocks” is not efficient), and necessary parameters.

4.2 WGCATCH

The Working Group on Commercial Catches (WGCATCH), chaired by Mike Armstrong (UK) and Hans Gerritsen (Ireland), met in ICES HQ, Copenhagen, Denmark, 10–14 November 2014. The meeting was attended by 34 experts from 21 laboratories or organizations, covering 16 countries. The tasks of the meeting were as follows:

- 1) Develop the longer term work plan for WGCATCH;
- 2) Evaluate methods and develop guidelines for best practice in carrying out sampling of commercial fish catches on shore;
- 3) Provide advice on adapting sampling protocols to anticipated changes in management measures (e.g. discard ban) or technical advances in monitoring;
- 4) Provide advice to the RDB Steering Group on development of the RDB to support design-based data collection and estimates;
- 5) Evaluate responses to test applications of data quality assurance tables for onboard and port sampling developed by WKPICS, SGPIDS and PGCCDBS, make improvements for further testing, and develop clear guidelines for completing and interpreting the tables.

In order to evaluate methods and develop guidelines for best practice in carrying out sampling of commercial sampling of commercial fish catches onshore, a questionnaire was circulated before the meeting. This questionnaire was structured around guidelines developed by the ICES Workshop on Practical Implementation of Statistically Sound Catch Sampling Programmes (WKPICS) for best practice at each stage of the sampling process, and asked for a description of current practices at each of these stages. Based on these questionnaires, common and specific problems were catalogued and potential solutions were identified. At the same time, the discussion of the questionnaires provided a form of peer-review of the sampling designs and identified where improvements could be made. The other main subject addressed by WGCATCH concerns the provision of advice on adapting sampling protocols to deal with the impact of the introduction of the landing obligation, which will alter discarding practices and result in additional categories of catch being landed. A second questionnaire was circulated before the meeting to allow the group to identify the fleets that will be affected and possible issues that are anticipated, as well as to propose solutions to adapt existing monitoring and sampling schemes and to quantify bias resulting from the introduction of this regulation. In total 15 countries provided questionnaires with responses that were included into the report. WGCATCH outlined a range of likely scenarios and the expected effects of these on fishery sampling programmes, and developed guidelines for adapting sampling schemes. The group also explored a range of analyses that could be conducted in order to quantify bias resulting from the introduction of the landing obligation. Finally, a number of pilot studies/case studies were summarized, highlighting the practical issues involved.

The group provided advice on how the Regional Data Base (RDB) should be developed to support design-based data collection and estimates. Some general comments on future development of quality indicators are given in the report

The working group did not produce any data outputs; the outputs of the group are the report and the appendix with the responses from the Questionnaires.

4.3 PGDATA

The ICES Planning Group on Data Needs for Assessments and Advice (PGDATA) met for the first time in Lysekil, Sweden, from 30 June to 3 July 2015. The main focus for the group in its first year was the end-use of data and information on data quality by the ICES stock assessment process, particularly the benchmarking of single-species stock assessments. The PG reviewed previous benchmark stock assessment meeting reports going back to 2009, and also the responses of ICES stock assessment expert groups to data-quality questionnaires for discards estimates supplied by Member States in the 2015 ICES data call, and found an extremely variable approach to evaluating and acting upon the quality of data available for the assessments. PGDATA drafted, using this background, detailed guidelines for the data compilation and evaluation stage of ICES benchmark stock assessments to encourage a more consistent, transparent and objective approach for data evaluation. The guidelines will be tested using a full data evaluation process for Irish Sea whiting in the forthcoming Irish Sea benchmark assessment (WKIRISH).

The 3-year programme for PGDATA included (for its second year) the planning and running of a workshop to develop tools for evaluating how the quality of individual data sets affect the precision of stock assessment estimates, and how data improvements would affect the quality of assessments and advice. To address this, PGDATA has planned to conduct a workshop on cost benefit analysis of data collection in support of stock assessment and fishery management (WKCOSTBEN, see Annex 1), which would meet at ICES HQ, 28 June to 1 July 2016. The proposed terms of reference are given at the end of this section.

PGDATA discussed its role in relation to InterCatch, the Regional Data Bases (RDB) and the ICES Data Group. The PG recognises the potential huge value of the RDB as a tool for end users to scrutinise the coverage and quality of fishery sampling data, including the evaluation and documentation of data quality for benchmark and update assessments at ICES. PGDATA recommends that funding be made available for further development of the RDB including analysis routines to provide estimates needed for stock assessments or other end use together with diagnostics of the quality of data and estimates.

The PG addressed a European Commission request on the needs for recreational fishery data, and supported the detailed response of the 2015 ICES Working Group on Recreational Fishery Surveys, but further emphasizing role of RCG / ICES in defining regional needs and sampling plans.

Feedback on the role and work programme of PGDATA was sought at the meeting from the chairs of ICES Expert Groups (WGBIOP, WGCATCH) and regional coordination meetings (RCMs), and the work programme for 2015/16 was reviewed and adapted.

4.4 WKISCON2

The Workshop on Implementation Studies on Concurrent Length Sampling [WKISCON2] co-chaired by Liz Clarke, Scotland, and Nuno Prista, Portugal, met in Sukarrieta, Spain 16–19 June 2015. The meeting was attended by 12 experts from 9 institutes, covering 7 Member States.

WKISCON2 originated from a request from RCM NA and was proposed by WGCATCH to evaluate the utility of the data being collected by concurrent sampling, based on a concern that it was unclear whether the significant resource needed to carry out concurrent sampling provided benefits that outweighed the costs. The aims of the workshop were to review the implementation of concurrent sampling for lengths by MS; identify current uses and benefits of data collected in this way; consider the statistical arguments for carrying out concurrent sampling of landings; and evaluate the implications of discontinuing current at-sea and on-shore concurrent sampling. In the preparation for the workshop, 2 questionnaires and a data call were sent to 23 DCF National Correspondents (17 institutes replied) and 42 ICES Expert Groups (26 replied). This evidence was analysed in subgroups and complemented with plenary discussions throughout the week.

WKISCON2 concluded that:

- Stock assessment and discard estimation and management are the major current uses of concurrent sampling data. Scientific catch estimation, advice to local, national and international authorities on MSFD descriptors, mixed fisheries and gear interactions and mortality of rare species, data-poor stocks and PETS are amongst the other uses of these data by ICES EGs and national institutes. WKISCON2 does make the point, though, that these uses do not specifically require length data that have been sampled concurrently on a trip and that models have not been developed yet to make full use of concurrent data at trip-level.
- Concurrent sampling for lengths of discards and landings at-sea is a long-established practice in most MS and haul-level and trip level data is already available for current and future uses albeit sometimes limited by the lower sample size of these programmes.
- From the analyses, concurrent sampling of fishing trips onshore has resulted in substantial increases in the number of species sampled for lengths without jeopardizing the main uses of the data.

- Concurrent sampling of landings on-shore is a simple and effective way to estimate species composition (in weight and length) of landings. Incomplete concurrent samples could bias these estimates if they are included in these analyses.
- Compared to some other methods, it can be an inefficient method of obtaining length distributions of specific stocks when officially reported species compositions (e.g. from logbooks) are considered accurate and supra-specific commercial categories do not appear.
- Increased information on by-catch species, general catch composition, and improved data on mixed-fisheries were considered by EGs to be the major benefit of concurrent sampling.
- Full species concurrent sampling of the catch at a haul-level is the best way to provide data to measure the interactions between all species caught and evaluate the impacts of fisheries on marine biological resources and on the ecosystem. WKISCON2 considers sampling at-sea is the ideal way of sampling commercial fisheries, and in this context concurrent sampling for lengths of landings onshore should be considered as a complement to it but in some cases will be our only reference to interspecies reactions and ecosystems as a consequence of cost.
- To take full advantage of the benefits of concurrent sampling, both at-sea and on-shore, full-species concurrent sampling should be implemented without resort to species lists such as the current G1 and G2 lists.
- Incomplete sampling events need to be flagged in national and international databases. The sampling should be regionally co-ordinated to ensure implementation is consistent and data are comparable at a regional level.

WKISCON2s overall conclusions were that the implementation of concurrent sampling of landings onshore and at-sea has provided benefits in terms of provision of data for more species. However, more than concurrent sampling itself, statistically sound sampling of the full range of species caught should be the overall aim of future revisions of the DCF and a return to strict stock based sampling should not be an option. To achieve statistically sound sampling of commercial catches various statistical approaches may be valid, concurrent sampling being one among them.

RCMNSEA endorsed the conclusion that returning to stock based sampling was not an option and accepts that if multispecies data is required from fisheries they should be sampled concurrently ashore if not sampled at sea. Partial concurrent sampling has been demonstrated by the French as an effective way of collecting assessment data but this does limit how these data may be used or combined with other countries concurrent data. Cost is still a concern when trying to satisfy a number of end-users needs, when designing a programme there will likely be the choice between more species less trips and more trips less species.

If these data are to be used at a regional level then these data need to be identifiable. MS need to categorise their sampling data as full concurrent, partial concurrent or non-concurrent in their national sampling databases. The RDB must have the facility to flag the concurrent sample data at the trip level. The partial (based on a species list), full or non-concurrent will inform on how these data may be combined at a regional level.

Other options could be considered to gather the same information that concurrent sampling data provides. An improvement in the standardisation of pre-sale industry grades across France offers the opportunity to do a study on different statistical approaches to sampling using this additional information.

4.5 RDB-SC

The steering committee for the regional database (RDB-SC) met 25-26 November in Copenhagen, Denmark. It was the sixth meeting of the committee. Participants were representatives from the RCM Baltic, RCM North Sea & Eastern Arctic, RCM North Atlantic, ICES as well as observers from the RDB-SC for large pelagic fish (LPF) and Ireland. The RDB-SC is responsible for strategic planning, technical governance, operational issues and estimates of costs in the overall governance of the regional database (RDB). The RDB-SC interacts with the Regional Coordination Meetings (RCMs) and Liaison Meeting (LM) on other tasks such as development needs and content governance.

Throughout the year have a long row of recommendations on development needs for the RDB been directed towards the RDB-SC. The recommendations origins primarily from the RCMs and LM but also from expert groups dealing with methodological aspects of data collection. The recommendations cover a wide range of aspects such as harmonization of reference lists, reports from the database to the RCMs, possible reports to make compilation of technical reports to COM more efficient, uptake of upload logs, adaptation of the exchange format to meet expected requirements coming from a design based approach, landing obligation and regional sampling programmes but also future estimation processes and interaction between InterCatch and the RDB. As there presently are limited funds (no EU funds for development) for development are however the possibilities to act upon the recommendations limited. Nevertheless the RDB-SC discussed all different recommendations and initiatives, sorted them into a short, medium and longterm time scale and suggested ways forward were possible. A new workshop, RDB VI, was initiated within this process. The workshop will deal with exchange format for effort and landings data to meet requirements for design based sampling and estimation. The workshop will be held in Sete, France November 2015.

The RDB-SC further went through all comments from the MS on the data policy document and prepared a generic answers.

4.6 WKRDB 5

The WKRDB 2014-01 workshop for the regional database (RDB) was held in Aberdeen Scotland from 27 to 31 October 2014. This was the 5th regional database workshop and was aimed at developing the data exchange formats to enable design based sampling and estimation. Twenty-three participants from 13 national institutions including ICES and the RDB hosts attended. The workshop was co-chaired by Alastair Pout and Liz Clarke from Marine Scotland Science.

Case studies of stratified and multi-stage sampling schemes from 13 nations were presented and scrutinised. For each case study, the sampling hierarchies were identified, and at each level in the hierarchy inclusion probabilities were derived. Where the inclusion probabilities were required to be estimated this was described. Traditionally a lot of estimation in fisheries has required the recording of weights, and a move to design based sampling would be a move towards also recording probabilities based on counts.

A prototype sampling data structure appropriate for design based sampling and estimation was developed prior to the workshop. A key element of the new structure was the sampling event “SE” table which is required to contain information on the primary sampling units and the sampling design that is not included in the current data format. It was agreed that the new sampling data structure should incorporate a form of this table. The new structure also incorporated many of the suggested changes from previous working groups (WKRDB 3, SGPIIDS 2013, RCM NS & EA 2013, RCM NA 2013 etc.).

Insights from the case studies and scrutiny of the prototype data format served to highlight and identify the situations where new fields were required and where modification to the code lists used by the RDB were necessary. More widespread use of this format for design-based estimation could identify further requirements. The recording of numbers sampled, in relation to the available total, as a means of generating a sampling probability, is a new feature of the exchange format. For the calculation of a sample weight, this sampling probability is required at all levels of the sampling hierarchies. The issues this raises need further consideration. Therefore despite the progress made it is apparent that a final data structure suitable for design-based estimation will only emerge as a result of the widespread adoption of design-based estimation.

Within the workshop there was a discussion as to whether the exchange format should move towards an efficient storage system (with much less replication of data already in the system) or a more informative descriptive exchange format (in which information is replicated for ease of analysis). Consideration was also given to the idea of more than one exchange format might be necessary ; perhaps that there will be an exchange format for importing the data into the RDB and another format for exporting data out of the RDB and for use between countries.

A prototype population data structure was presented and discussed. It was agreed that the issues in the use and need for population data was complex and could not be resolved at a single workshop. These issues included, amongst other things: when the appropriate links between the population and the sample need to be made; how complex the population data need to be; how effort metrics and landings values are combined, and how appropriate effort measures are defined for different fisheries. It was felt that the development of the population data format required the input of a wide range of interested parties.

There was a recognition the design-based estimation for fisheries will be developed in the statistical environment R, which most of the people at the workshop were using. The extent to which fisheries estimation can be carried out using the R package “survey” should be tested in national institutes. The use of the survey package was demonstrated for discard estimation where sampling strata overlapped domains, including using post-stratification corrections to improve the precision of the estimates. Also the estimation of numbers-at-length for a market day PSU where there was sampling of multiple commercial categories from a number of different vessels. The use of R has implications as to how estimation would be developed in conjunction with the RDB. The utility of the R language is such that use of R would benefit collaboration, and also greatly enables development work and testing of the formats used by the RDB.

There was a general desire to harness the momentum of the workshop in order to develop this format in a regional setting. To that end international collaboration between all interested parties was felt to be important and that this could best be achieved by projects or study contracts. The use of a SharePoint site for the exchange of code would facilitate this process. All interested parties should be involved and at some point wider regional participation, involving a representation from all countries will be required. The RDB is a comprehensive tool which includes not just a database, but import and export functionalities, and will need to include design-based estimation. One of the main aims of the RDB is that the data used for the stock assessment and advice can be documented, and that all the estimation methods are approved and standardised. The RDB should also be considered as a platform for development of formats and analysis tools as well as a means of storing and exchanging data.

Members of the workshop found the hands-on approach focussed the discussion and provided a way to make faster progress, and there was a general desire for more workshops along similar lines. Initially the RDB workshops were set up to help nations populate the database, the requirement now is for workshops for the development of the database.

4.7 STECF general feed-back

STECF has produced three plenary reports (STECF 14-24; 15-01 and 15-13), and one ad hoc Workshop report addressing different issues of data collection since the last meeting of RCM NS&EA. The reports provide a number of recommendations be taken into account for the present and future data collection.

The RCM NS&EA was given an overview of results of EWG 14-17 on preparation for future data collection under the revised DCF (reviewed and adopted by the STECF 14-24). The RCM NS&EA recommend that- initiatives for taking the STECF EWG recommendations into account are initiated and noted also that several recommendations of EWG 14-17 have already implemented. The results of the STECF Workshop on Transversal variables are presented in the Section 4.9.

STECF Working Group on Fisheries Dependent Information

The STECF 'Working Group on Fisheries Dependent Information, held from 06-10 July 2015, Varese, Italy, aims to provide updated estimates of trends in fishing effort, landings and discards by species, CPUE and LPUE by fisheries and species and temporal trends in the spatial pattern of fishing effort by fisheries. The output is based on data uploaded by Member States into the FDI database in response of the 2015 FDI data call. The compliance to the data call was successful as two weeks in advance of the EWG the data were ready for processing.

Although extensive, the idea was to compile a similar report after one meeting as in previous years after two meeting of the STECF 'effort' EWGs. However, the EWG did not receive useable data by the end of the meeting because of delays in post submission processing of the data and re-processing of the data after error detection. So the dependency of the EWG on the facilities at the JRC was the main weakness in the process this year.

The fact that a lot of work had to be done after the EWG, may had a possible impact on the quality of the work carried out as there was less time to check the output data.

In order to have the required data information on time, the following elements need to be ensured:

- Timely submission by MS, and correct processing into aggregated data tables.
- Timely provision of processed data tables to experts prior to the meeting for feedback and data re-submission (if necessary).
- Ability of MS to submit data corrections during the meeting and the behest of the EWG.

With the fading out of existing fishing effort management regimes, the EWG made use of the opportunity to discuss the future of the FDI database and the structure of the FDI data call. Moreover, the Zagreb data collection framework (DCF) workshop on transversal variables meeting highlighted limitations and inconsistencies in the current data set. The EWG agreed that the FDI data call should move to the collection of an EU wide data set of transversal data which should provide data on capacity, effort, landings, and discards for scientific and policy use with EU wide coverage and at an aggregation level similar to the 2015 FDI data call. The data set should be as generic and comprehensive as possible and the FDI database would not be attached to a specific EWG. Despite the data call being more wide-ranging, the aggregation level would be kept at a relatively high level, i.e. it is not proposed to go in the direction of collecting directly primary and detailed data from the MS. Clear rules for the processing and aggregation of the data are urgent in order to ensure that the processing and aggregation takes place in a consistent way allowing comparability across MS and the merging with economic data.

4.8 Workshop on transversal variables

The Workshop on the Transversal Variables took place in Zagreb from the 19th to 23rd of January, 2015. This workshop was proposed by the Planning Group on Economic Issues (PGECON) at its 3rd meeting (May 31 - April 4, 2014). PGECON proposed the realization of an ad-hoc workshop on "Linking economic and biological effort data / call design" in 2014. The need for the workshop was due to the increasing need of having economic and biologic data on a level of disaggregation that would allow a proper interoperability between datasets. The terms of reference (ToR) the group addressed were:

- A. Comparison of economic and biological effort data calls (resolution/level of aggregation); experience from management plan evaluation;
- B. Definition of variables (e.g. days at sea vs. fishing days) – what is really required/used/desirable?;
- C. Opportunities for harmonization (resolution, definition, codification); any conclusions for DCMAP?
- D. Exploration of optimum timing for the data calls and specific data sets.

The workshop had 29 attendees (25 experts from MS, 3 experts from JRC and the focal point from DG MARE). The skills of the experts that attended the WK were deliberately varied through the request for registrations from biologists, economists and data managers. This allowed a broad coverage on the issues to be discussed. The work was conducted in three subgroups: data crunching

(ToR A), variables estimation and definition (ToR B) and Codes Harmonization (ToR C). ToR D was addressed in plenary. Terms of Reference were addressed fully.

ToR A, was addressed using three approaches: 1. Identify what data is available from these three data calls launched by DGMARE (Fleet economic data call, Effort regimes data call and Mediterranean and Black sea data call. The Official data call letters and definitions can be found at DCF website at <http://datacollection.jrc.ec.europa.eu/data-calls>.) and managed by JRC and what data would be required to prepare a dataset to support bio-economic modelling. This analysis has focused on the data structure, rather than on the content and has allowed identification of the convergences and mismatches between data calls and to put forward solutions that would support overcoming the differences; 2. Compare landings and effort data between the data calls and explore the reasons for the different values; 3. Explore how datasets can be used and merged using a case study.

The main conclusion is that though problems were found in terms of dimensionality in each data call individually, the group concluded that by merging the two data sets the dimensions in place would be the ones needed for bio-economic analysis at supra national level.

Additionally, it was identified that there is a strong need for guidance and identification of standards with regards to data provision for the MS. Several specific misunderstandings from the effort data call and the economic data call were identified. Situations such as those arising due to data confidentiality must be objectively tackled by providing clear policy to MS to avoid missing data and/or data rejection during JRC data calls. Maybe EUROSTAT's vast experience might be of good use for JRC. In general the effort and economic landings data sets are relatively comparable. However, an investigation into landings data in both data sets (limited to North Sea demersal species in 2012) revealed several inconsistencies and discrepancies, including mismatch between gears and values. To help resolve this there needs to be 1 clarification from some MS on how data are allocated to gear categories, particularly within the economic data call.

On addressing ToR B, the group has prepared a full description of the calculation methods each MS uses when estimating effort variables - days at sea and fishing days - under 6 fishing scenarios; This has proved that different calculation methodologies are in place across MS and sometimes within a MS. This has a huge impact on data comparability and data coherence.

The Transversal WS January 2015 agreed to set up common standards for calculating the number of days at sea and number of fishing days and recommends that all MS use this common standard when calculating days at sea and fishing days. In order to have sufficient information for carrying out the various analyses requested by the EU Commission the Transversal WS January 2015 recommends that the status of some of the existing logbook fields (dimension of passive gears, and fishing time) are changed from optional fields to mandatory fields. In addition, MS should make every effort to ensure completion of an existing mandatory field (number of fishing operations).

Calculation of days at sea and fishing days in the EU Member States is carried out using several different methods. Ways to estimate fishing days for passive gears and vessels not carrying logbooks should be examined in a follow up technical workshop. The workshop should also identify the information needed to calculate the estimates and evaluate to what extent the identified information is available through logbooks and other official statistics. The workshop should then agree on harmonized ways to estimate fishing days that can be implemented in MS.

With regard to ToR C, the group has thoroughly evaluated the drafted suggestions for standardisation of codes and variable definitions used in both the effort and economic data calls and defined a single approach (where possible). The main variable groups considered were Capacity, Landings and Effort. In reviewing the data call code lists the group also compared the standard codes published by DG MARE in the EC Master Data Register (MDR). This contains data structures and lists of fisheries codes to be used in electronic information recording and exchanges among Member States and for Member States' communications with Norway to record and report fishing activities.

For harmonization on resolution, definition and codification: a set of tables with standard codes and levels of disaggregation to be used in the three data calls for the future was produced; (already aligned with the DGMARE Master Data Register). Also the group suggested standardisation of codes and variable definitions for use in both effort and economic data calls and definition of one single approach (where possible). The main variable groups considered were Capacity, Landings and Effort.

ToR D, discussed the timing for the data calls, however it was agreed that this issue had already been fully addressed by a STECF EWG (EWG 14-17) 2 and therefore further elaboration from the workshop was unnecessary.

Given the important conclusions drawn and the additional work identified, the group has agreed on a roadmap for the way forward to tackle the different problems encountered and put in place solutions. This roadmap entails firstly a presentation of the workshop results to the STECF spring plenary. Second, to have an intermediate workshop with MS to assess how MS data would result from the new standards and to assess to what extent the scenarios identified represent the range of situations MS will find in their own data, so as to guarantee a smooth implementation for the 2016 data calls.

5. Regional data collection, analysis and storage and evolution towards Regional Coordination Groups (RCGs)

5.1 The fishPi project (MARE/2014/19)

The project “strengthening regional cooperation in data collection” MARE2014-19 has been renamed “fishPi” and is a collaboration of 13 scientific institutions from 12 member states based on the RCM NSEA region. Members of the RCM NA and RCM Baltic have prominent roles within the project. There are two external experts with particular statistical and survey design experience involved. The fishPi project is running in parallel with a project with similar aims and objectives in the Mediterranean and Black Sea region. The project started in April 2015 and is due to run for one year with an interim meeting with the commission which is scheduled for 21st October. An overview of the project structure, work packages, aims, objectives and progress was presented to plenary. Progress since April 2015 has covered the following:

Work Package 1 Regional Coordination

A review of existing data collection coordination activities with focus on the RCM work.

A draft is being compiled. Strengths and weaknesses of the current RCM work are highlighted. Following a web meeting (28-07-15) with the Mediterranean consortium some of the methods used in the review will be adapted. The review will be finalized in early 2016. The intent is to circulate the review to present and former chairs of RCM NS&EA and RCM NA for comment.

A proposal for a regional work programme.

The regional work programme will include planned activities, including allocation of tasks between Member States where possible, a timeframe over which relevant outcomes from WP2-4 can be implemented as well as identification of areas where further development is needed to support regional cooperation. We will address different kinds of supporting mechanisms (decision making processes, training of staff, databases etc.) that are needed to facilitate transparent regional sampling programmes.

The proposal will build heavily on the outcomes of the feasibility studies in WP 2.3 and the outcomes from WP3 and WP4. Work is therefore scheduled to start during month 9 of the project. We will initiate work on this deliverable with a core group meeting 07-10-15 (Brussels).

A document detailing the results of the regional consultation.

Consultation with the Member States will take place at the end of the project (currently scheduled for month 10, February). During the WP1 core group meeting of 07-10-15 we will discuss how to proceed with the consultation process. We would like to discuss the consultation process with the Commission during the interim project meeting. One issue, for example, is whether Baltic Member States not fishing in NS and EA regions should be invited to participate in this process.

Work Package 2

WP 2.1 Statistical planning and estimation

Documentation on the statistical principles underlying design based sampling and probability based selection, and the use of appropriate statistical estimators has been drafted. Generic software scripts have been written in R to simulate the two stage cluster sampling of on-shore and at-sea sampling that will work on the case study data sets. Generic R scripts to run estimation software using the survey package have been written. These scripts have been documented, circulated to case study core members and are stored in the fishPi ShareSite.

WP 2.2 Formats and code lists

The csData format developed at the WKRDB 5 workshop in October 2014 has, with some additional refinements, been defined as an R object and stored in an R package “fishPiFormats”. The code lists for WoRMS species list, the FAO ASFIS species lists, the revised metier table, the UNLOCODE table, and the DCF vessel type codes have been collected into R and compiled into an R

package “fishPiCodes”. These, with additional functions, were packaged as “RCMfunctions” and made available to the RCM NSEA and RCM NA during September 2015 to facilitate data analysis prior to and during those meetings.

WP 2.3 Case studies

Prior to the commencement of work for the case studies a data sharing agreement was drawn up and signed by the project partners (Signed: 26-06-15).

The scope of the simulations studies was mapped out and the format of the data request determined during WP meetings in May, after which the data request was circulated to all data providers for the case studies. Data was provided by all participant countries for a June WP meeting (with the exception of Norway), and stored on a secure SharePoint site provided by ICES.

Each case study has collated a fine scale data set, based on logbook and sales note data, as provided by the 13 scientific institutions operating in the regions. The variables in these data sets have been harmonized and checked and where necessary refinements and amendments made. Some additional supplementary data requests have resulted from this process. The CS data sets will enable simulation models of alternative sampling designs to be tested, and the estimation process used, to be tested. This process was facilitated by the generation of software tools, scripts and functions which have been disseminated within the core team of the work package.

Simulation code has been run on these data sets and a number of scenarios tested, the tests statistics determined and the existing available effort allocations by sampling institution for at-sea and on-shore sampling schemes has been collated.

Fisheries descriptions have been, or are in the process of being, drafted for most of the case studies

Overall WP2 progress

Work in WP 2 during the first part of the project has facilitated greater understanding of the statistical principles and applications underlying the sampling, the data sets, the regional fisheries and the statistical language R, in all members of the WP2 core teams.

Work Package 3

Sampling programmes for ecosystem indicators, small scale and recreational fisheries.

One of the main objectives under this work package is to contact and have a real feedback with the main end users (mainly ICES expert Working Groups) during the duration of the project. Taking this into account, the most relevant end users have been identified and they have also been contacted in the first months of the project.

This contact has been achieved using different approaches:

- Taking advantage of members of this WP participating in some of these ICES expert groups, to contact the chairs and giving a brief presentation of the objectives of the project and the importance of their participation (e.g. WGRFS, WGCATCH).
- GoToMeeting (GTM) has been used to contact relevant scientist involved in the issues covered under this WP (e.g. Simon Northridge expert in by-catch issues).

Several GTM meetings have been undertaken among the core members of the WP for the purposes of clarification, discussion and to provide progress reports. These online meetings are an effective and important collaborative mechanism.

From 21st to 23th of July, the first internal face to face meeting was held in Sukarrieta. All core members and relevant end users participated in the meeting.

The most important outcome of the meeting was to define a possible future regional sampling plan for these new ecosystem variables (by-catch, stomach contents and RF/SSF fisheries). This regional sampling plan should define the stages in design and implementation of a regional data collection scheme defined in STECF-13-06. These may include definition of:

- Regional objectives and estimates needed
- Type of data needed
- Data collection methods and design
- Sampling intensity; optimization
- Data collection
- Data archiving: DB
- Quality evaluation
- Assessment/ Analysis/ estimation
- Scientific advice/ report/ statistics

The contents of each of these sampling plan stages was discussed, and how they should be covered for stomach sampling, PETs sampling and small scale and recreational fisheries. It was also decided to use case studies as scenarios to give examples in each of the stages. Additionally, other examples may also be used (e.g. knowledge and experiences in other countries, US, Australia, Norway etc.).

The WP team is aware that during this project it will probably not be possible to make an in-depth analysis of the sample size, precision, and number of samples required by Member States for these new sampling plans. The team agreed to start by providing guidelines and examples explaining how the different stages in the sampling plan should be covered. The different steps required have been identified and defined for this process and for each of the variables.

A work plan has been proposed to explore the required steps during the project.

Online meetings are planned between the WP leaders of both the Mediterranean and Black Sea Project and the fishPi Project to ensure that both project teams are aware of progress within the parallel projects and information can be exchanged as appropriate.

Work Package 4

The work in this package has been organised in two stages, centred on a face to face meeting in Port-en-Bessin in July 2015. The first stage was organisational, taking account of the kick-off and PMC recommendations, and the second stage started after the meeting with the implementation of the quality checks routines. The main recommendations from the kick-off and the PMC, were to

- bridge with the Mediterranean and Black Sea consortium : 2 experts participated to the Port-en-Bessin meeting and the minutes of the meeting will be shared by the two consortium
- start the work from the data exchange format proposed by the October 2014 WKRDB meeting: two example datasets were put together using the most recent update of the data exchange format;
- develop a minimum set of functions within a R package, recycling the COST checks and exploratory functions, and reviewing national initiatives on the matter: this was the main objective of the Port-en-Bessin meeting (see the minutes in appendice 13).

After the Port-en-Bessin meeting, progress was made in the implementation of the quality checks process. A list of reference tables including: species list; metier (based on the Intercatch facilities); harbour and spatial area (ICES areas and rectangles), were set up in order to implement an inconsistency check on the database. This inconsistency check is currently being tested on commercial and sampled French operational data. A review of the bibliography regarding an outlier detection method for fishery data was made and a list of the existing implementations of these methods in the R language is almost complete. Some of these methods are starting to be integrated into the FishPi R package. A framework to build an automatic reporting system for the data quality procedures related to a given dataset has now been implemented and will be released after the WKRDB meeting, when the csPi format will be completed.

The roadmap for the remaining work is to finalise the quality checks procedures before the end of the year and meet by web conference in January 2016 to validate the work and propose an annual calendar for the implementation of the minimum set of data quality checks. The constraints on these quality checks are that they have to be conducted on national and regional data and be consistent with the annual timeline of the data submission process to ICES expert groups and data calls to the RDB.

5.2 Progress in data quality screening, harmonisation of national and regional data checking procedures

The undergoing fishPi project in the North Sea area includes a work package on data quality issues with the objectives to evaluate the quality of data collected at national and regional levels using shared tools and progress on the harmonisation of data exchange formats and data structures.

The new data structure for an RDB as proposed by WKRDB (Anon, 2014) will be used in this project, and R packages will be developed based on the former COST project. These functions will enable the control of the data structure and the formats, provided there are reference lists of codes agreed (see section ToR 3g for details) and basic data exploration analysis. A new approach will also be developed on smart outlier detection, and the workplan is

- to implement non-parametric univariate outlier detection methods using median, absolute standard deviation, median absolute deviation and adjusted outlyingness index (the choice of the best mathematical operator will benefit to the experience of the members of the fishPi team in data compilation).
- to test non parametric multivariate outlier detection methods available in numerous R packages (namely Blocked Adaptive Computationally-Efficient Outlier Nominators in the robust package, PCOut method for outlier identification in

High Dimensions and sign method for outlier identification in high dimensions in the mvoutlier package, partitioning around medoids in qpcR package, etc.).

The output of these methods will be flagged for each observation detected as an outlier. Visual output will be produced in order to help the validation of the outlier detection by the data compilation operators (e.g. multivariate outlier plot in StatDA package).

Overall data quality will be eased also by the harmonization at regional level of all data entries and code lists in the RDB. Recommendations and more details can be found in the ToR 3g section.

5.3 Role of the sampling data format in terms of integration of sampling data collection, recording and the present and future RCM data calls

The sampling data format “csData” in use at present in the RDB was originally devised for the collection of discard data in the Baltic, and was refined and implemented in the FishFrame data base that formed the basis of the present RDB. It underwent a number of refinements during the COST project.

The csData structure enables the recording of hierarchical multistage sampling from the fishing trip, (tr table), to the fishing event for example a haul or the setting of nets (hh table), to size and species sorting (sl table), to the length frequency of the fish (hl table), finally to the collection of data such as age structures, sex and maturity of individual fish (ca table).

However in both the on-shore and the at-sea situation the fishing trip is the secondary sampling unit, and therefore during the WKRDB workshop (ICES 2015 xx) this format was revised with the addition of an additional table (se table) to take account of the site x day and vessel primary sampling units. The se table is also needed to record the context in which the sampling has occurred, such as the sampling scheme and the stratification, and enable the linking of the sample to the population being sampled. A number of additional fields were also added to the other tables to enable the recording of the variety of sampling probability variables encountered in the diverse situations encountered in various national sampling programmes. The revisions broadened the scope of the structure to cope with marine organisms other than fish, such as Crustacea, and molluscs. Further minor refinements were implemented during the fishPi project, and the format has been coded as an object for use in the R statistical language.

The csData structure has to be both an effective means of recording sampling data, and serve as an efficient data exchange format for use in the RDB. This dual role poses a number of challenges.

The revised format now needs to be populated and used by scientific institutes, and tested to ensure that it is able to be used for the estimation processes needed. The revised format is as yet not implemented in the RDB but will be required for the probability based sampling and estimation as these practices are implemented by national sampling schemes with the move toward probability based selection methods. The existing data model of the RDB may well need to be considered in relation to this new structure.

Code lists used in the csData format are harmonised as far as possible to those in use in the EU master data register, the WoRMS species list, the UN location codes, and the standard metier lists maintained by the RCMs.

5.4 Data collection protocols for at-sea and on-shore sampling in the context of regional sampling designs and probability selection methods

A regional sampling design will be based on probability based selection of sampling units from sampling frames. The sampling frame for on-shore sampling will in the vast majority of situations be a site x date combination. For at-sea sampling it will be a list of vessels. Therefore generating lists of the most prominent landing locations (in terms of tonnage and value) and lists of vessels by national flag and length class, serve as a way of considering the pertinent elements of a regional design. It is of course recognised that harbour lists and flag length categories, and species all approximate the resolution at which fisheries data collection has historically been undertaken and assessment is currently managed, typically combinations of species, spatial locations and metiers. However it can be argued that this fine scale resolution does not well serve either data collection or assessment, and that it is necessary that the construction of regional sampling plan is established on a broad overview of the species of fish and fleets. Moving to a statistically sound sampling design will improve the quality of the samples (in terms of bias and precision), the regional approach has potential for more efficiency in the system, and all together they are the cornerstone of the new EU-MAP (see also next section on ToR 3e for complementary information).

5.5 Design-based sampling: state of play

Through the years quite some effort has been done to promote the implementation of statistically sound designs for sampling commercial catches and help people design and implement such schemes. Meetings such as WKPICS, SGPIIDS and WGCATCH have provided guidelines for good practice, and explored ways of documenting the quality of sampling designs and of the data that are collected in a way that is useful for different types of end-users. To be able to evaluate the level of implementation of probability

based sampling, table 5.1 and 5.2 summarize some key features (e.g. the selection of the primary sampling unit from the sampling frame), for 'on shore' and 'at sea' sampling by country. The information on 'on shore' sampling was derived from last year's WGCATCH report where prior to the meeting a questionnaire was circulated to all participants asking for details of the national shore sampling design. To get updated information on 'at sea' sampling, MS were asked to provide this information at the RCM meeting.

Country	on shore (updated from WGCATCH 2014)			
	Frame	1 st SU	Stratification of 1 st SU	Selection of 1 st SU
Belgium	NA (does not perform onshore sampling)			
Denmark	Demersal – Case 1	Site	Each sales place, Quarter	Systematic in time
	Demersal – Case 2			
Denmark	Demersal – Case 1	Site	Each Sales place, Quarter	Systematic in time
	Demersal – Case 2			
France	Group of ports * fleet	Landing event	Quarter and large fishing grounds	Systematic in time
Germany	Group of ports	Ports	2 frames	Systematic by amount of landings
Ireland	Group of ports	Sites * time	Fleet, area, quarter	Quasi random, proportional
Netherlands	Demersal - Group of ports	Sites * time	quarter and port	Systematic in time
Netherlands	Pelagic - Group of ports	vessel	quarter and port	Systematic in time
Lithuania	Demersal and Pelagic	NA (does not perform onshore sampling in distant waters)		
Poland	Demersal and Pelagic	Vessels	a trip of the operating vessels on a specified métier/quarter	Accordingly to the intensity of the national fishing-quota utilization in given year .
Portugal	onshore	Auction*Day	Quarter	Quasi Systematic
			Port	
Sweden	Matrix of port cluster vs days	Port cluster x day	Quarter, Area	Random, unequal probability
UK England	Demersal	Sites * time	Geo-region, Gear group Quarter, Site class, Site, Day	Day is random within biweek period
	Crustacean	Sites * time	Geo-region, Gear group Quarter, Site class, Site, Day	Day is random within biweek period
UK (Northern Ireland)	Group of ports	Vessel landing	Geographic area, quater, gear type	Guided by stock-based and concurrent sampling targets.
UK (Scotland)	List of markets (demersal fish species)	Day	Market	Quasi-random
Spain				
Latvia				
Estonia				

Table 5.1 : Sampling frame details for on shore sampling (updated information from ICES/WGCATCH 2014)

Country	at sea			
	Frame	1 st SU	Stratification of 1 st SU	Selection of 1 st SU
Belgium	vessels >18m using towed demersal beam trawls	vessel	quarter and area	Non-random selection of vessels on opportunistic basis to meet sampling quotas by stratum
Denmark	All vessels >9.5 meter predominantly fishing with towed gear excluding vessels predominantly targeting small pelagic and sandeel and those using passive gears	vessel	Area * gear	Stratified random selection of vessels
France	Vessel list by métier	Vessel	area*métier*quarter	opportunistic with reasons for refusal registered
Germany	Vessel lists (separate lists for Baltic demersal, Baltic sprat and all other area)	Vessels	Baltic demersal/sprat : 2 strata based on contribution to cod/sprat landings 2 years previously. Other areas: stratified by fishing ground, target sp/gear, quarter or season	Baltic demersal fisheries: random selection. Other areas: non random selection to meet sampling quota by stratum
Netherlands	Vessel list	Vessels	fleet and quarter	quasi Random
Netherlands	Vessel list	Vessels	quarter	non random
Lithuania	Vessel list	Vessels * time	Region, métier, quarter or season	Accordingly to the intensity of the national fishing-quota utilization in given year
Poland	no information available	no information available	no information available	no information available
Portugal	vessels using OTB gears	Vessels	quarter, area, gear	quasi random
Sweden	vessel list	Vessel	Baltic - Quarter and area. IIIaN - quarter and gear	Random
UK England	List of vessels	vessels	vessel size, gear gp, quarter	random
UK (Northern Ireland)	Vessel Lists	Vessel	not available	Random
UK (Scotland)	Vessel Lists	Vessel	Home port, area and vessel type	Random list
Spain (IEO)	Vessel list	Vessel	Métier, quarter	Stratified random vessel selection
Latvia	Vessel list	Vessel	quarter * area * gear	random
Estonia	Vessel list	Vessel	time * area * gear	random or opportunistic

Table 5.2 : Sampling frame details for at-sea sampling

The shift from the historical quota based sampling to a new sampling approach more statistically sound will take time and guidance for each country. Tables 3.1 and 3.2 demonstrate how far European countries are from a fully statistical random sampling. The move have started, and these tables show that each country is investigating how to improve, after years of international meetings promoting statistically sound sampling (ICES/WKPICS, SGPIDS, WKPRECISE, WKMERGE, ...).

5.6 Areas and topics where there is a need for intra-institute intersessional work

In response to ToR 3g, the group discussed various needs and aspects relevant for facilitating future work of the RCM. Future tasks for the RCM don't differ much from the current tasks and revolve around 4 main topics as foreseen in the proposed DCF (background document to STECF EWG 14-02):

- Advising the Commission on changes required to the EU Multiannual Programme regarding core data to be collected (biological¹) and regarding all economic data to be collected (economic).
- Deciding on detailed aspects of the data to be collected (ie on those aspects that will no longer be specified in the EU MAP but left to RCGs/PGECON such as sampling strategies, precision levels);
- Planning and coordinating the sampling at regional level, allocating shares of sampling to MS following set rules (established in EU MAP) and coordinating preparation of National Programmes (only relevant for biological data & RCGs);
- Contributing to the quality assessment of data at regional level (mainly relevant for biological data & RCGs). The discussion focussed on envisaged coordination tasks and supporting work, rather than detailing all tasks for different groups.

¹ 'Biological' data as referred to in this text also encompasses fishery related data such as catch compositions

The discussion focussed on the structure of the RCGs, funding and short term needs to address the 4 tasks in an efficient way in the future.

Structure of RCGs

Converting RCMs to RCGs has been subject of many discussions over the last years in various groups. The common idea is that the RCGs will work as a process rather than a meeting once a year, although the meetings are crucial for the success of the coordination process. In the future, one annual meeting (or more when required) of the RCGs is foreseen to address the four main topics listed above, including identifying, distributing and steering the work in support of the coordination tasks, such as developments of the regional database, updating reference lists and development and implementation of sampling procedures. The work in support of the coordinating tasks will be done intersessionally throughout the year either in structured and formalised subgroups like the current Steering Committee for the Regional Databases or on a more temporal basis to address ad hoc issues. A data preparation group prior to the main meeting(s) is needed as well, to compile, quality check and prepare the data needed for analysis during the RCG, thus limiting the time needed at the RCG for manipulating the data. The annual meeting also details proposals for task sharing between MS to fulfil the commitments of a regional sampling plan. These proposals can then be discussed, refined when needed and agreed upon during a dedicated 2nd meeting by the NCs.

The RCM expressed a short term need to identify persons within the national institutes that can support the coordination process by addressing specific issues. This list can also be used in the future to establish dedicated groups to cover certain subjects. Moreover, certain issues might require specific expertise and the RCGs should have the opportunity to employ expert panels to address certain issues e.g. quality audit on MS sampling schemes (RCM NS&EA 2014). In other cases, individual institutes might be requested to address a specific issue. This need implies that the RCG need commitment by MS to allocate certain tasks to (groups of) persons. This also requires the commitment of national institutes to the RCG processes by providing and facilitating the experts to carry out their tasks during the year, rather than during one meeting a year. Working procedures and subsequent responsibilities differ for each MS, and RCM NS&EA suggests that the RCM chairs liaise with the EFARO board to discuss this issue and to prepare the ground for commitment to future tasks.

Issues that are common for all RCGs should be addressed on a supra regional level, ensuring efficient use of resources and uniform development of tools, reference lists and sampling designs. To enhance this process, intersessional cooperation between the RCG chairs is needed, as well as the establishment of supra regional subgroups when addressing these issues. Aligning the annual workplan for the RCGs shall be done by the RCGs chairs.

The transition from RCM to RCG will lead to additional meetings and an increase in intersessional work. Many tasks are common to all regions and do not require specific attention by a certain region. 5 RCMs are established for clearly defined regions: Baltic (BAL), North Sea & Eastern Arctic (NS&EA), North Atlantic (NA), Mediterranean (MED) and Long Distance Fisheries (LDF). The rationale between the area split is mainly based on regional differences concerning the countries involved in the fisheries, types of fisheries and the RFMO serving a certain region. The area split is considered to be relevant for Baltic for various reasons, such as the enclosed basin, relative limited number of Member States involved and non-existence of widely distributed species. Also relevant are dedicated RCMs for the Mediterranean and Long Distance Fisheries given their specific area of interest.

In order to reduce the future workload already at an early stage and to make the most efficient use of resources, amalgamating the RCM NA and RCM NS&EA, given the similarity in fisheries, overlap in widely distributed species and participating MS, into one group provides an option for reducing the workload beforehand. In 2012, both groups decided to continue to work alongside (RCM NS&EA 2012, RCM NA 2012). Based on the RCG tasks foreseen in the draft DCF, the group revisited the 2012 proposal to merge RCM NA and RCM NS&EA. RCM NS&EA shares its concerns regarding the decision making process in a merged group. E.g. setting up joint recommendations might be difficult by having more MS around the table. On the other hand, only a limited number of MS will be added from an RCM NS&EA perspective and solutions can be sought in the prescription of the decision making process. A round table indicated that the MS currently participating in NA and NS&EA are in favour of amalgamating the 2 groups. RCM NS&EA proposes that the LM takes this issue forward. Also, RCM NS&EA members will discuss the issue in the upcoming RCM NA.

Funding

Regional coordination encompasses many different aspects, ranging from regional cooperation, sampling design, quality control procedures, data storage and analysis to the actual coordination, reporting and accountancy. As substantial effort and costs are involved to facilitate the process of regional coordination, access to budgets to cover the costs is a fundamental need for future work.

As part of the EMFF, direct funds are available for the coordination of data collection. As it stands at the moment, these funds are believed to be available only through dedicated studies in response to calls for proposals and the accompanying legal procedures

and requirements. These studies are not suitable for funding the structural work carried out by the RCGs, as the administrative burden and uncertainty in budget allocations would hamper the continuity of the year-round work of the RCGs.

Unless opportunities for direct funding of the RCG work are found, the RCG work has to be funded by the MS involved through the respective national EMFF shares for coordination. Coordination costs then have to be identified in the National Workplans, but these costs shall be based on a multi-annual RCG workplan and required budget.

Short term needs

RCM NS&EA identified the following short term needs to facilitate next year's work.

- Regional database (see section 5.7 for detailed information)
 - Major updates to the RDB directly influencing the yearly data upload by MS or requiring re-upload of previously delivered data, need to be communicated at an early stage to the MS to facilitate the adaption of national data preparation procedures and databases where needed.
 - RDB should cater for the storage of different fractions of (former) discards.
 - RDB should cater for the upload of foreign country information, thus allowing to upload foreign samples processed in the landing country.
 - Continuation of the funds for developing the RDB is essential for future developments required to fulfil the RCM obligations.
- Identify task-specific experts
Compile a list holding names and contact details of national experts responsible for uploading data to the RDB, code lists (species/stocks related, fishery related, like metiers, harbours etc) and data preparations. RCM NS&EA started to compile this list at the meeting. See Annex 3
- Repository

As mentioned during previous RCMs, having a repository holding all standard documents as a reference is crucial for efficient and coherent execution of all tasks at hand. This repository shall be established and maintained under the jurisdiction of all RCMs.

5.7 Status of the Regional Database (RDB)

Harbour codes

This year only LOCODE should be used for harbour codes. LOCODE is a 5 alphanumeric code (typically only alphabetic characters) where the first 2 is the ISO country code and the last 3 is the harbour code. The LOCODE reference list is the Code-location under the EC's Master Data Register, the current version is Code-location-v1.7.xls, <https://circabc.europa.eu/faces/jsp/extension/wai/navigation/container.jsp?FormPrincipal: idcl=FormPrincipal:libraryContentList:pa ger&page=1&FormPrincipal SUBMIT=1&org.apache.myfaces.trinidad.faces.STATE=DUMMY> .

ICES has

- Updated all existing LOCODE with correct harbour name (Gr+ñs+Â to Gräsö)
- Added missing LOCODE
- Automatically found the correct LOCODE where there was a match on the harbour and updated to LOCODE
- Deleted 1768 none-LOCODE harbours

There is still some harbour codes which have not been substituted with LOCODE, when an obvious LOCODE harbour have not been identified. In the coming time ICES will contact countries, which will be asked to map the outstanding harbour codes to LOCODE codes. ICES will then make the final update.

Species codes

This year was the last year with the scientific Latin names for species. This year the only difference was that species, should be checked against the WoRMs species list and only species which was valid in the WoRMs species list should be used. As agreed in the Steering Committee of RDB (SCRDB) the species field will use the WoRMs AphiaId before next year's data call.

Metier acceptance per area

This year the only specific metiers was allowed depending on the area. ICES received a matrix of valid metiers and fishing grounds. ICES then changed the previous metier check in the RDB to a tailored metier check where each metier is checked based on the area. If a country have a metier, which is not accepted, it should be tried to find a substituting valid metier from the list send with the data call. If that is not possible the country should take contact to the RCM chair who maybe together with experts should be able to advice on what metier to use or if the metier need to be allowed, in such case ICES should contacted for adding the new valid metier.

Data exchange format document

A new version of the RDB exchange format document have been send out and it is available on the RDB website, <http://www.ices.dk/marine-data/data-portals/Pages/RDB-FishFrame.aspx> , and in the RDB. It is not a new exchange format, it is the same data exchange format, but the document have been made simpler, references have been corrected and updated, and the document have been made consistent with the existing checks.

Data Policy document

Before last year's RCM NSEA an updated version of the Data Policy document for the RDB was sent to all national correspondents for acceptance and support. All countries except France accepted and supported the Data Policy document and a few countries had comments or questions. Since last year ICES have compiled all comments and questions and the SCRDB have given answers, which was send to all countries.

At the National Correspondent meeting in Brussels the 25th March 2015 the European Commission (EC) informed all Member States (MS) that EC sees the Data Policy as an important and the EC lawyers agreed in the content of the document. Therefore, the EC encouraged all MS to sign in for it - including France.

EC feasibility study on storage and transmission

The EC's feasibility study on "Scientific data storage and transmission under the 2014-2020 Data Collection Multi-Annual Programme (DC-MAP)" concluded that the majority supported scenario 4 referred to as "Fisheries data hub", which is a structure not so far from the structure today, with data uploads to the RDB at ICES, see the figure 5.7.1 below. However, with indications of in the future to have a more streamlined data flow.

Figure 8. Scenario 4: “Fisheries data hub”

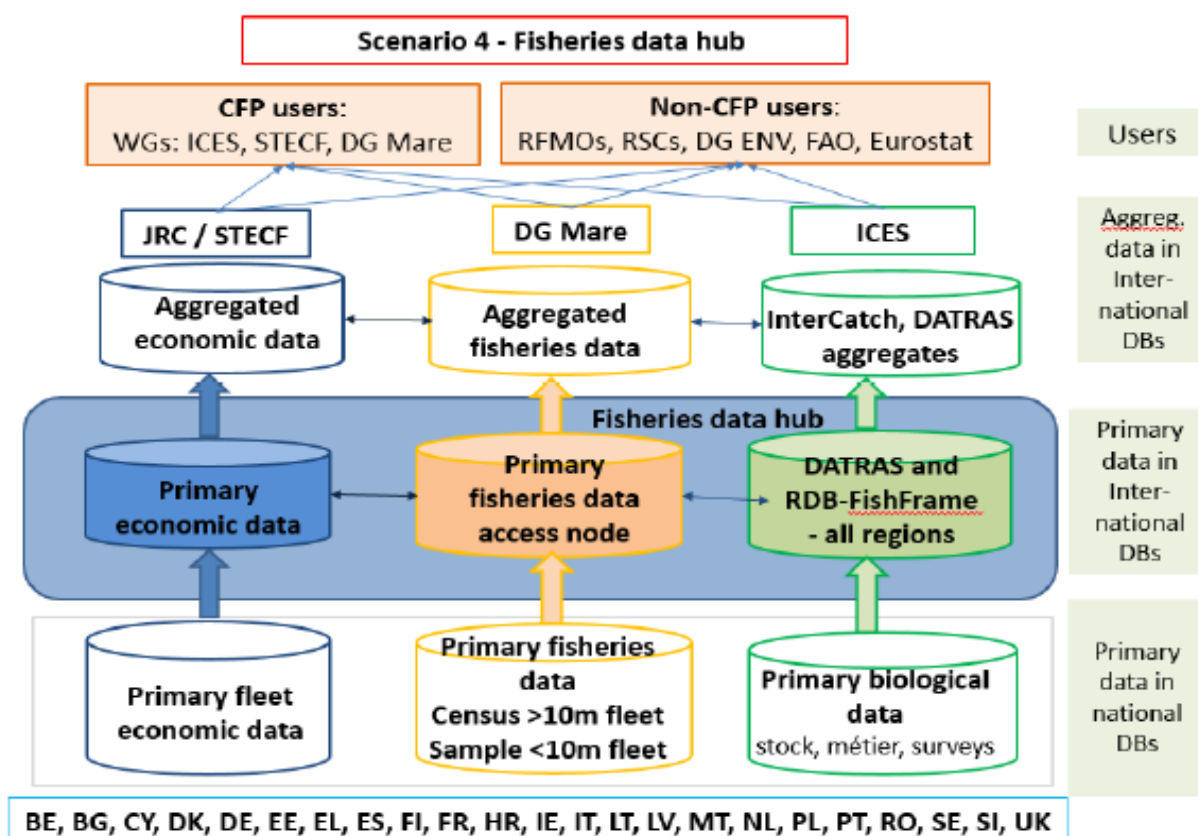


Figure 5.7.1 showing the preferred scenario 4 – Fisheries data hub

The RDB strategy

There are many benefits of having a central system like the RDB; common quality check also across countries, standardised methods to raise/estimate fisheries data, efficient standardised reports and analysis. Looking at the raising/estimation methods it is essential to only be able to raise/estimate data with approved and documented standardised methods, and it is also essential to be able to document all data processing steps. The move towards using statistical sound raising methods is ongoing in the fishPi project, WKRDB and WGCATCH. The starting point have been the R methods in the R survey. When the method have been approved and finalised, the most cost effective way to use these methods is to include the methods directly into the RDB using version control. Using standardised raising methods is one thing. But it is also essential that the national institutes after uploads and estimations can extract the data from the RDB, so they can verify the uploaded data and follow the data through the processing steps. In the figure 5.7.2 below the future RDB system structure is shown.

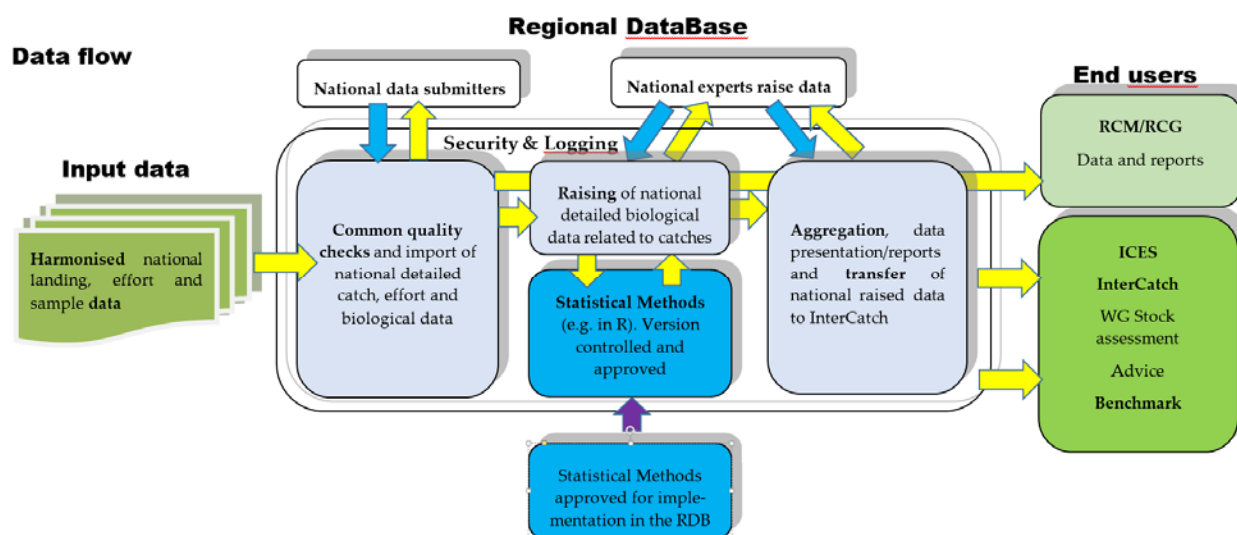


Figure 5.7.2 of the future RDB system structure

ICES one time funding of development of the RDB

The RDB increases the data quality, ensure standardised raising methods and documentation. It is therefore very important that there is funding for development of the RDB, so there is progress and the RDB is able to adapt to new demands. The European Commission (EC) have so far not funded developments of the RDB. But in September 2014 the ICES council delegates approved a one time development of the RDB for 91 000 EUR, because ICES sees the need for development. The focus have been on new analysis reports.

RDB funding in the future

The RDB have for several year been the essential system for data for analysis for the RCM Baltic Sea, RCM North Sea & Eastern Arctic and RCM North Atlantic, and it can support the Member states in raising national data and answering data calls. The RCMs depend on the RDB, and the data for stock assessment and advice to the EC also depend on data quality, standardised proven raising methods and documentation, it is therefore difficult to understand that EC is not funding developments of the RDB. The RDB is a large and complex system with a large relational database behind it and complex data manipulations, algorithms and methods. The RDB is the most cost efficient way to work with all the data from all the countries because the raising processing and processes for all data is more or less the same. Since the environment around the RDB is continuously changing with new needs and demands, it is essential that there is funding for development. The most natural way of funding RDB development would be to include RDB development in the existing Memorandum of Understanding (MoU) agreement for the RDB between EC and ICES. This will ensure qualified resources, who would be able to implement new needs and demands, in the most cost efficient, safe and successful way. It would not be a sustainable approach not to have a longer term funding for development of a system like the RDB. If every developments had to be funded by projects, there would first of all be a long time delay from a need is identified to a call for tender, to a project proposal, to acceptance, to project start and finally the implementation. However, there will also be an overhead in writing a project proposal, as setup the organisation. People would have to be hired on short term contracts, with the risk of not knowing exactly the skills of the new project resources. Then there is the steep and long learning curve of the large and complex RDB system. Such a scenario is not cost efficient and would not benefit any parties. Therefore it is recommended that development of the RDB is included in the MoU between EC and ICES. It would also seem natural that EC is interested in progress and stabile development of the RDB, especially after the conclusions drawn from the feasibility study on storage and transmission.

6. Analysis of RDB 2014 data

RDB upload status

Tables 6.3 to 6.8 were compiled by ICES and summarise the data relevant to RCM NS&EA as available in the RDB before the RCM meeting.

Vessel flag country (CL)	2009	2010	2011	2012	2013	2014
Belgium	55	58	59	59	54	75
Denmark	79	73	73	84	89	91
England		121	124	118	113	113
Estonia	1	1	1	2	5	9
France		93	94	88		
Germany		33	62	61	59	61
Ireland	19	13	7	18	18	19
Latvia	1	1	1	1	1	1
Lithuania	2	5	7	9	3	8
Netherlands	66	75	78	90	86	90
Northern Ireland		37	43	39	32	
Poland	9	9	9	10	10	12
Portugal				10	9	12
Scotland		94	92	92	89	77
Spain						
Sweden	57	71	67	68	67	64
Wales		12	17	24	40	32

Table 6.3: Number of species per country and year available in the RDB (table CL)

Vessel flag country (CE)	2009	2010	2011	2012	2013	2014
Belgium	17	19	19	18	15	16
Denmark	51	49	53	49	46	38
England		100	104	95	94	70
Estonia	1	1	1	1	2	3
France		33	36	32		
Germany		42	32	35	29	
Ireland	5	4	8	6	9	5
Latvia	1	1	1	1	1	1
Lithuania	2	4	7	5	3	6
Netherlands	46	48	48	44	47	41
Northern Ireland		15	16	15	9	
Poland	2	1	1	1	1	1
Portugal	1	1	1	4	3	3
Scotland		57	57	59	55	49
Spain						
Sweden	48	42	40	49	55	45
Wales		4	7	9	7	6

Table 6.5: Number of metiers per country and year available in the RDB (table CE)

Vessel flag country (HL)	2009	2010	2011	2012	2013	2014
Belgium	9	23	19	16	13	13
Denmark	97	95	95	91	99	96
England	110	99	102	115	101	92
Estonia						2
France				1		
Germany	71	84	70	110	102	107
Ireland	2	2	2	2	2	2
Latvia	1	1	1	1	1	1
Lithuania			1	2	2	2
Netherlands	32	35	37	40	34	40
Northern Ireland	4	6	16	1	5	6
Poland	11	18	3	17	16	16
Scotland	28	33	27	32	103	91
Spain						
Sweden	8	76	76	81	71	80
United Kingdom	11	23	26	16		2
Wales				1	1	2

Table 6.7: Number of length measurements per country and year available in the RDB (table HL)

Vessel flag country (CL)	2009	2010	2011	2012	2013	2014
Belgium	34208	33950	33479	32424	30550	48267
Denmark	141359	146704	139788	148783	141981	156789
England		28248	30132	27328	42957	39456
Estonia	22	26	17	28	42	62
France		55460	56818	54850		
Germany		3602	15817	14859	14796	14775
Ireland	57	38	41	65	77	85
Latvia	22	21	21	33	26	28
Lithuania	8	15	18	23	11	165
Netherlands	33872	33430	33639	32078	28880	29822
Northern Ireland		526	542	424	450	
Poland	58	47	10	26	53	155
Portugal				127	187	158
Scotland		13365	13870	13268	23323	23264
Spain						
Sweden	38261	38144	29703	28706	32696	31586
Wales		32	37	87	113	112

Tables 6.4: Number of records per country and year in the RDB (table CL)

Vessel flag country (SL)	2009	2010	2011	2012	2013	2014
Belgium	35	42	46	38	43	45
Denmark	102	100	103	101	111	102
England	110	99	102	115	101	92
Estonia						2
France				1		
Germany	90	96	87	126	117	133
Ireland	2	2	2	2	2	2
Latvia	1	1	1	1	1	1
Lithuania			1	2	2	3
Netherlands	36	39	41	43	38	43
Northern Ireland	4	6	16	1	5	6
Poland	15	22	6	17	17	17
Scotland	28	33	27	32	103	91
Spain						
Sweden	8	90	93	97	85	109
United Kingdom	11	23	26	16		2
Wales				1	1	2

Tables 6.6: Number of species per country and year in the RDB (table SL)

Vessel flag country (CA)	2009	2010	2011	2012	2013	2014
Belgium	6	6	7	7	3	6
Denmark	19	19	21	21	23	21
England	8	19	18	9	9	11
France						
Germany	3	6	8	10	8	11
Ireland	2	2	2	2	2	2
Netherlands	12	13	12	12	12	12
Northern Ireland	2	5	8		4	
Poland	1	2	3	1	1	1
Scotland	3	11	10	12	11	11
Spain						
Sweden	4	6	6	5	5	5
United Kingdom	4	10	9	3		

Tables 6.8: Number of age information per country and year in the RDB (table CA)

All countries, except France, Northern Ireland and Spain, have uploaded landings data for 2014. All countries, except France, Northern Ireland, Germany and Spain, have uploaded effort data for 2014. All countries, except France and Spain, have uploaded sample data for 2014.

The numbers of species in landings and sample data and the numbers of metiers in effort data seems in general stable, which indicate all data have been uploaded for the countries uploading data. The data from the countries, which provided data to the RCM through another channel than uploading to the RDB, are not included in the landings, effort and biological data extracts from the RDB and not in the standard reports provided by ICES.

Many countries have updated data for previous years, which is very positive

ICES have made many improvements during the last year, both on the maintenance side but also on the administrative side. Data policy document is finished (only France has not commented). EC have concluded after the feasibility study “transmission and storage” that the RDB should continue and stay at ICES, there could be future streamlining of the data flow.

Upload in the RDB			
RCM	NS&EA	2015	RCM NSEA urges all countries to upload their data in time for the RCM. RCM NS&EA also recommends EU to allow the appointment of some experts to prepare tables and figures for some days in advance of the RCM meeting
Recommendation			
justification			Data fiddling within the RCM, has led to such delays in the analysis that no time was left for coordination. Only upload of the full datasets in time and preparation of summary tables by a group of experts in advance of RCM meeting can promote an effective coordinating meeting.
Follow-up actions needed			All MS to upload their datasets in time A small group of experts (2-3 persons) to be named to prepare tables and figures summarising the information contained in the RDB in advance of the RCM meeting.
Responsible persons for follow-up actions			All MS EU and RCM NS&EA
Time frame (Deadline)			Mid-2016 to be used by RCM NS&EA in 2016.
Use of the RDB			
RCM	NS&EA	2015	RCM NSEA recommends that once the code list is finalized, all countries should repopulate the whole time series of landings, effort and samples to the RDB
Recommendation			
justification			A multitude of codes for e.g. harbours, métiers, have been used and accepted to the RDB, leading to heterogeneities between countries and/or between years. Agreed code list for all fields of the RDB (see recommendation in ToR g), will enable the development of regional procedures for validation, statistical inferences and reporting.
Follow-up actions needed			RCM NS&EA to agree on code lists for all fields of the RDB All MS to implement the agreed code lists in their national data center for exporting purposes and upload their data in the RDB.
Responsible persons for follow-up actions			RCM NS&EA All MS
Time frame (Deadline)			Mid-2016 to be used by RCM NS&EA in 2016.

Analysis of NS&EA data during the RCM 2015

Landings data was available from the RDB (see tables 6.3 to 6.8) for most countries, and was downloaded prior to the meeting. Data from France was downloaded from the IFREMER site, data from Estonia and Spain were provided at the meeting and incorporated into a single data set.

It needs to be emphasised that this is the most complete data set of landings that has been achieved for use in an RCM. Considerable efforts have been made by member states in harmonising particular key code lists and the general quality and completeness is to be commended.

1.1.1 Code lists

Code lists within this data set have been largely harmonised; the UNLOCODE list has been used for harbour, the accepted WoRMS scientific names for the species field, and the regional metier table as supplied with the data call, used for the level 6 metier field. While there remain anomalies, and variability in the degree to which scientific institutions have been able to harmonise these data, it is apparent that considerable progress has been made since 2013. The data analysis performed during the RCM focused on looking at groups of fish defined by the FAO's ASFIS groupings. The ASFIS lists <http://www.fao.org/fishery/collection/asfis/en> provides a useful tool for the analysis of fisheries data, their use in collaboration with the WoRMS lists in use in the RDB should be promoted.

1.1.2 Software and common tools

The data analysis has been conducted in the R <http://www.R-project.org/> an open source language for statistical computing. The power and adaptability of R makes it particularly suited for the manipulation storage and analysis of the large data sets involved. Functions, software scripts and packages have been developed during the COST project, during the fishPi project and by individuals in scientific institutions and have all contributed to the ability to analyse fisheries data. Efforts to harmonise and disseminate such tools are ongoing, greatly facilitated by the work of the RCM and should be promoted.

1.1.3 Analysis

The analysis focused on looking at gross patterns in the commercial fisheries within the region. Groupings of fish species, are based on their taxonomy, which reflect physiological similarities between species. These groupings are flatfish, demersal and pelagic. These physiological similarities of the fish, together with the geographic characteristics of the North Sea and Eastern Arctic region influence the distribution of these fish species. All these characteristics are reflected in the characteristics of the vessels making up these fleets exploiting these fish, and the gears that are employed to do so. The characteristics of the fleets and the fish, in turn play through into their commercial usage and the supply and distribution chain and the intended use of the catch. In short by considering gross characteristics we aim to facilitate a data collection overview that chimes with the biological, commercial and management regimes that exist.

The analysis is basically summing landed weight over different grouping variables using the “tapply” function and generating a bar plot and tables of the result. The “landWt” field was used for the landed weight, all values being converted to tonnes. The grouping variables available in the cIData “harbour” is used for the landing location, “taxon” for the species, or taxonomic group. The vessel length category “vslLenCat” and the vessel flag “vslFlgCtry” fields were combined to provide a proxy for different elements within different national flag fleets, the “foCatEu6” field for the level 6 metier description. Maps were produced of tonnages by statistical rectangle, ports were plotted from the locations available in the UNLOCODE data set.

Demersal Fisheries in NSEA area

Landings of demersal species ISSCAAP codes 32 ,33 and 34 total 193123 tonnes of which 97% is accounted for by 20 species, cod, haddock, saithe, Norway pout, whiting and hake have the largest tonnages. These are landed into 53 ports, the top four; Peterhead, Thyborøn, Hanstholm and Boulogne-sur-Mer account for 63% of the landed weight. 17 of these ports are in the UK (10 Scotland, 7 England), 10 in Denmark, 7 in France and 7 in the Netherlands. Vigo in Spain has landings of 4298 tonnes of demersal fish from the area, and is 8th most important port by landed weight. The most prolific fleets are Scottish 24-40m, Danish 20-40m, Danish >40m, Scottish 18-24m and the French >40m vessels.

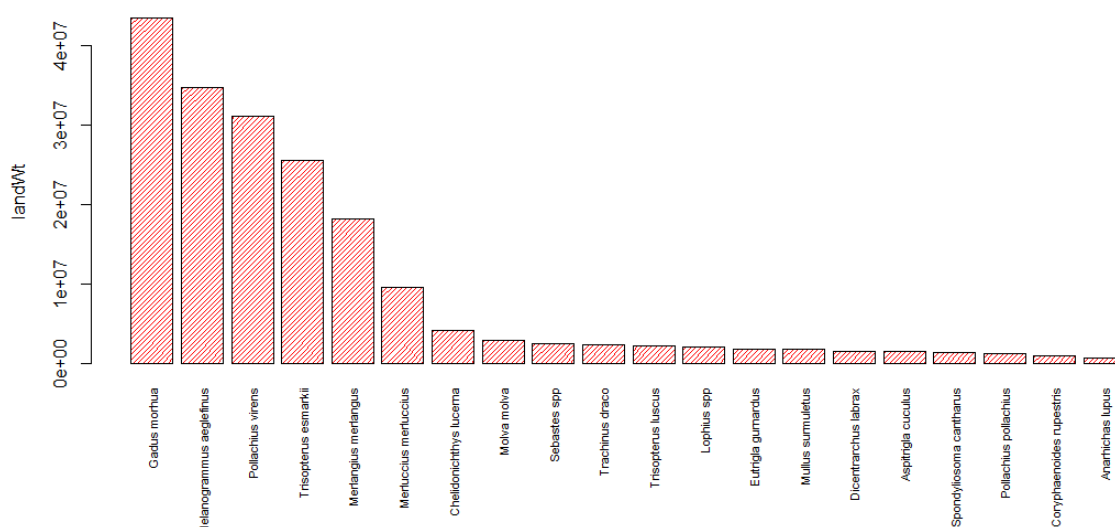


Figure 6.1 : Landed weight for the top 20 demersal species in sub-divisions IIIa, IVabc and VIIId.

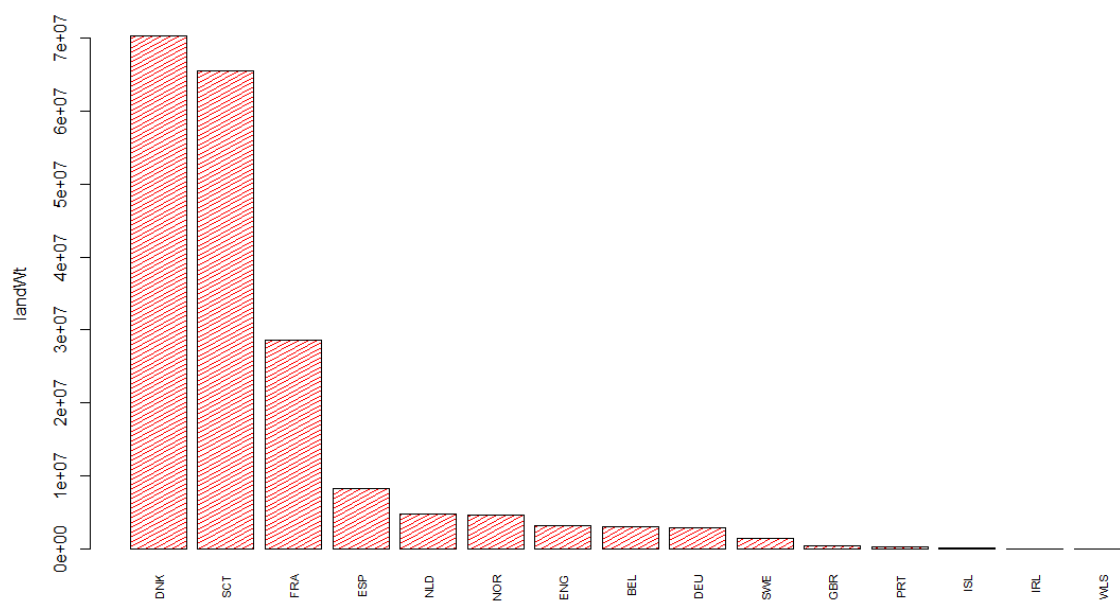


Figure 6.2 : Landed weight of demersal species by landing countries in sub-divisions IIIa, IVabc and VIId.



Figure 6.3 : Landing weights by harbour for demersal species in sub-divisions IIIa, IVabc and VIId.

ctry	Code	Name	landWt (t)	cum percent	ctry	Code	Name	landWt (t)	cum percent
GBR	GBPHD	Peterhead	43600	23.3%	DNK	DKSTD	Strandby	645	95.1%
DNK	DKTHN	Thyborøn	32332	40.6%	FRA	FRDPE	Dieppe	602	95.4%
DNK	DKHAN	Hanstholm	30208	56.7%	DNK	DKTHM	Them	597	95.7%
FRA	FRBOL	Boulogne-sur-	13586	64.0%	NLD	NLSCE	Scheveningen	553	96.0%
GBR	GBLER	Lerwick	8421	68.5%	DNK	DKTMD	Thorsminde	513	96.3%
GBR	GBSCR	Scrabster	6224	71.8%	NLD	NLHAR	Harlingen	491	96.6%
GBR	GBFRB	Fraserburgh	4394	74.1%	GBR	GBNSH	North Shields	476	96.8%
ESP	ESVGO	Vigo	4299	76.4%	DNK	DKTHP	Thorup Stranc	464	97.1%
GBR	GBSWY	Scalloway	3739	78.4%	NLD	NLDHR	Den Helder	444	97.3%
NOR	NOHFT	Hammerfest	3607	80.4%	GBR	GBBLY	Blyth	443	97.6%
NA	ESRAN	NA	3558	82.3%	NOR	NOBJF	Båtsfjord	440	97.8%
DNK	DKHIR	Hirtshals	3289	84.0%	NLD	NLSTD	Stellendam	377	98.0%
DEU	DECUX	CUXHAVEN	2272	85.2%	FRA	FRLEH	Le Havre	328	98.2%
DNK	DKGRE	Grenaa	2053	86.3%	DEU	DEBRV	BREMERHAVE	323	98.3%
DNK	DKSKA	Skagen	2047	87.4%	GBR	GBRTL	Port Erroll	314	98.5%
BEL	BEZEE	Zeebrugge	1956	88.5%	GBR	GBLOV	Lochinver	304	98.7%
FRA	FRRTB	Port-en-Bessir	1668	89.4%	GBR	GBSHO	Shoreham	296	98.8%
DNK	DKHVS	Hvide Sande	1488	90.1%	PRT	PTAVE	Aveiro	269	99.0%
GBR	GBCUV	Cullivoe, Yell	1372	90.9%	GBR	GBSCA	Scarborough	267	99.1%
GBR	GBKBE	Kinlochbervie	1174	91.5%	SWE	SESMO	Smögen	261	99.3%
NLD	NLIJM	IJmuiden/Vels	1152	92.1%	ESP	ESLCG	La Coruña	254	99.4%
BEL	BEOST	Oostende (Ost)	930	92.6%	GBR	GBAMB	Amble	252	99.5%
NOR	NOTOS	Tromsø	921	93.1%	NLD	NLURK	Urk	241	99.7%
NLD	NLVLI	Vlissingen	910	93.6%	GBR	GBNHV	Newhaven	220	99.8%
FRA	FR CER	Cherbourg	802	94.0%	GBR	GBHTP	Hartlepool	215	99.9%
FRA	FRFEC	Fécamp	715	94.4%	GBR	GBULL	Ullapool	214	100.0%
FRA	FRLTR	Le Tréport	660	94.8%					

Table 6.9 : Landing weights by harbour ranked by order of importance and the cumulative percentage

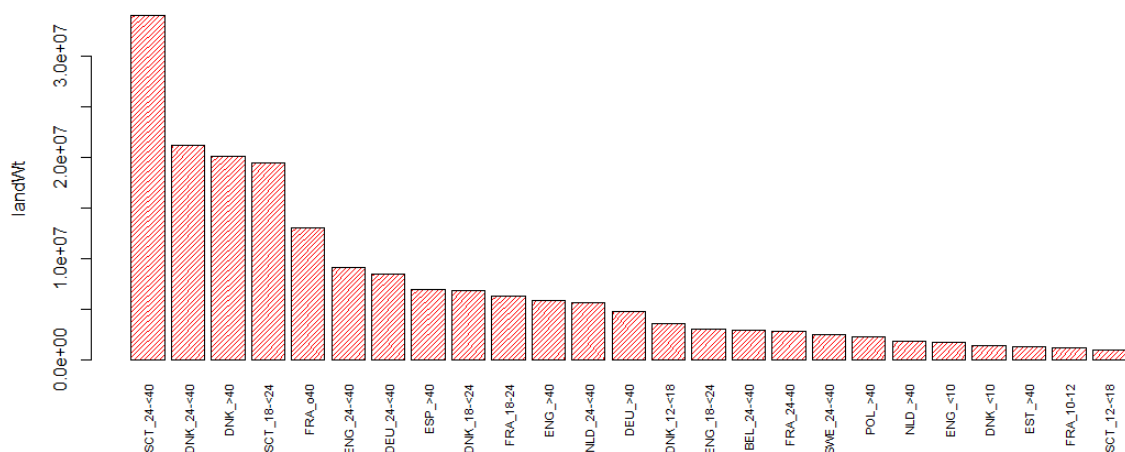


Figure 6.4 : Landing weights by métiers for demersal species in sub-divisions IIIa, IVabc and VIId.

ctry	fleet	landWt (t)	cum percent
SCT	SCT_24-<40	33996	18.2%
DNK	DNK_24-<40	21151	29.6%
DNK	DNK_>40	20111	40.3%
SCT	SCT_18-<24	19441	50.8%
FRA	FRA_o40	13065	57.8%
ENG	ENG_24-<40	9133	62.7%
DEU	DEU_24-<40	8472	67.2%
ESP	ESP_>40	6935	70.9%
DNK	DNK_18-<24	6808	74.6%
FRA	FRA_18-24	6285	78.0%
ENG	ENG_>40	5808	81.1%
NLD	NLD_24-<40	5602	84.1%
DEU	DEU_>40	4699	86.6%
DNK	DNK_12-<18	3575	88.5%
ENG	ENG_18-<24	2957	90.1%
BEL	BEL_24-<40	2920	91.7%
FRA	FRA_24-40	2744	93.1%
SWE	SWE_24-<40	2425	94.4%
POL	POL_>40	2233	95.6%
NLD	NLD_>40	1772	96.6%
ENG	ENG_<10	1703	97.5%
DNK	DNK_<10	1326	98.2%
EST	EST_>40	1304	98.9%
FRA	FRA_10-12	1114	99.5%
SCT	SCT_12-<18	941	100.0%

Table 6.10 : Landing weights by metier ranked by order of importance and the cumulative percentage

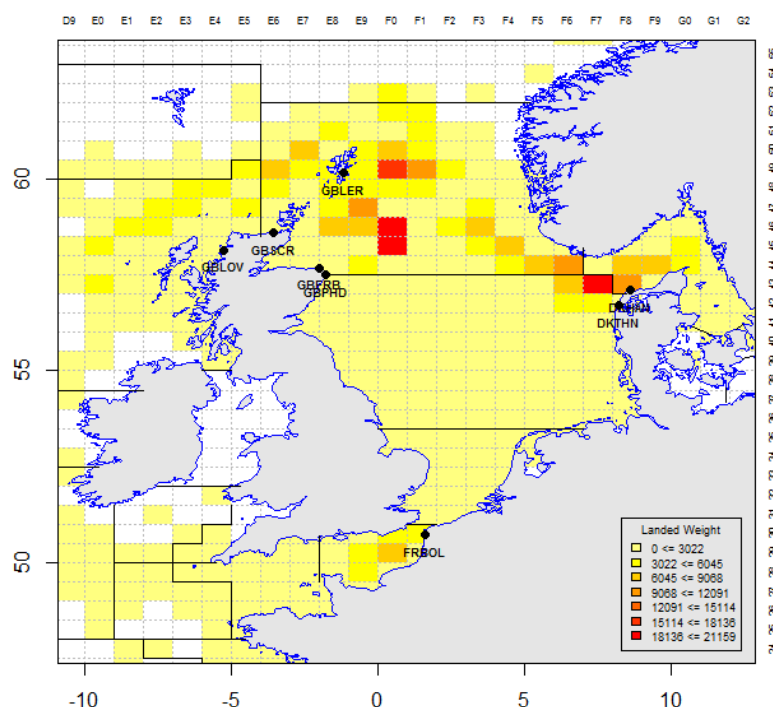


Figure 6.6 : Map of demersal landings by stat rectangle (using the fishPi CS2 data set which includes BEL DEU DNK FRA GBE GBN GBW NLD SCT SWE data, but no that from ESP).

1.1.4 Flatfish fisheries in the NSEA area

There were 23 species classified by ISCAP code 31 as flatfish landed in the NSEA area in 2014, the total landings of these species being 128633 tonnes. The main species with substantial landings are European plaice which accounts for 65% of the total landed weight, then in diminishing order; common dab, Greenland halibut, lemon sole, witch and others. The landings into 41 harbour collectively account for 122097 tonnes, equivalent to 95% of the total landed weight for these taxa. The main landing ports are Harlingen, Den Helder, IJmuiden/Velsen, and Thyborøn. The main fleets involved are the NLD > 40m, NLD 24-40m, ENG >40m and BEL 24-40m. The recorded metiers show a predominance of the beam trawlers in this fishery TBB_DEF accounting for 64006 tonnes of the landings. The bulk of the landings originate from the southern North Sea.

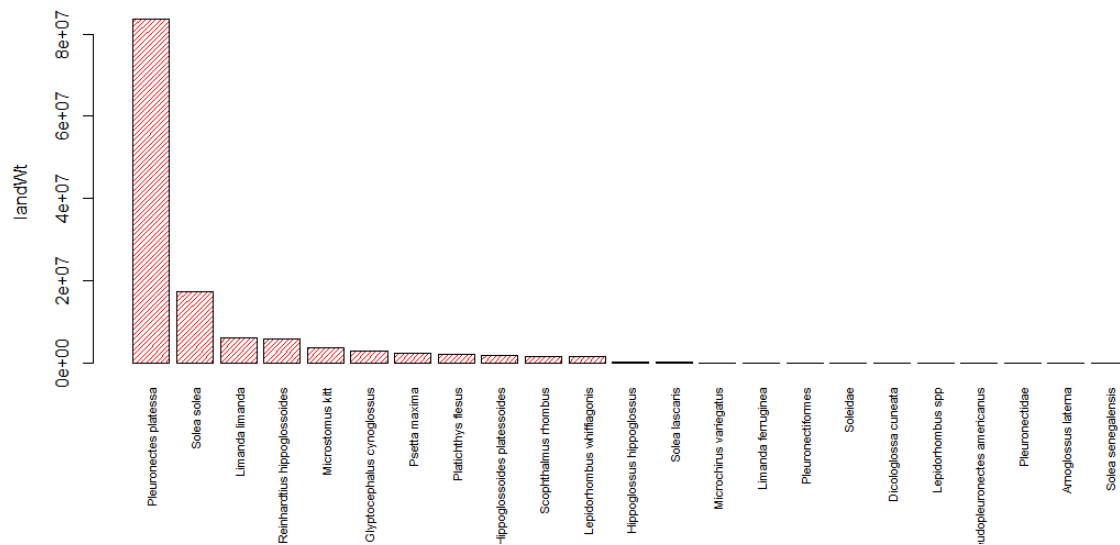


Figure 6.7 : Landing weights by taxon for flatfish species in sub-divisions IIIa, IVabc and VIId

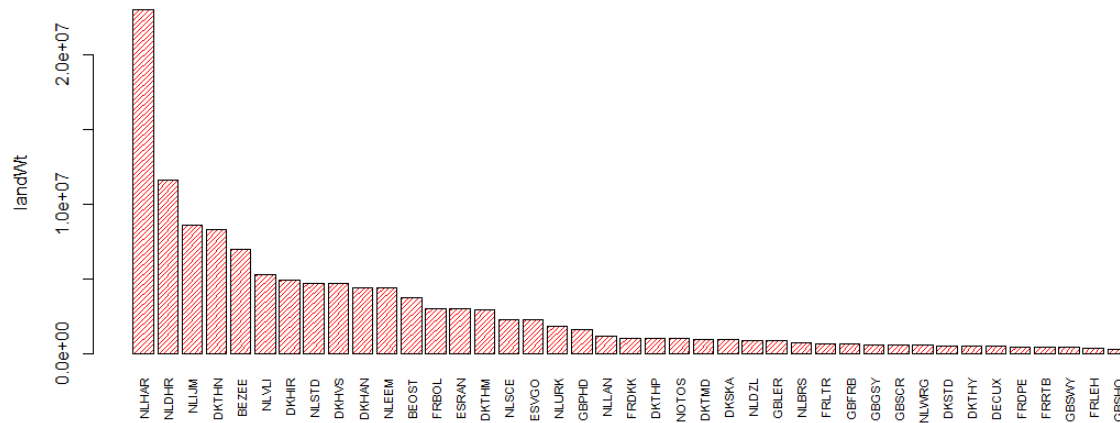


Figure 6.8 : Landing weights by harbour for flatfish species in sub-divisions IIIa, IVabc and VIId

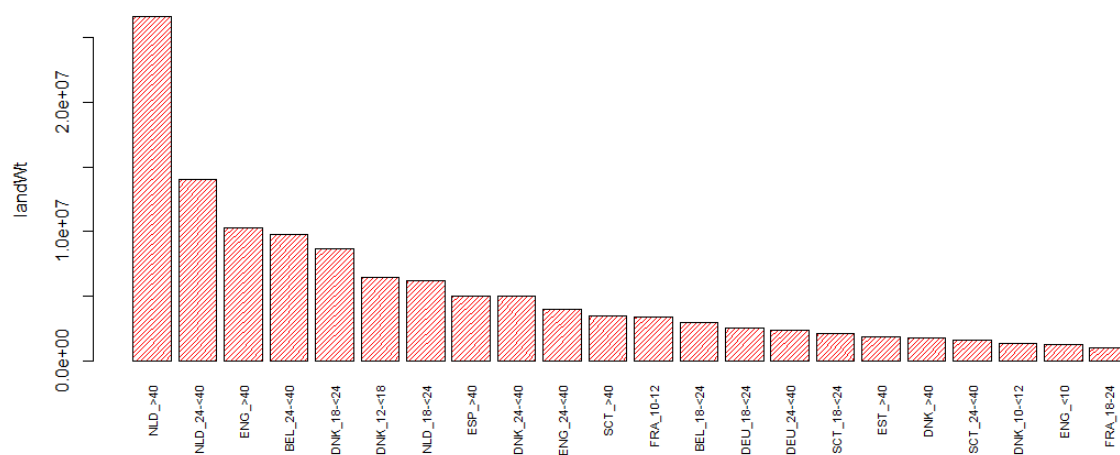


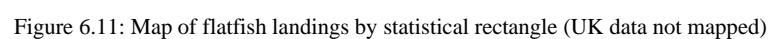
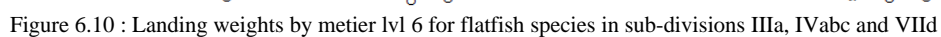
Figure 6.9 : Landing weights by length classes of vessels for flatfish species in sub-divisions IIIa, IVabc and VIId

ctry	code	name	landWt	cum percent
NLD	NLHAR	Harlingen	22986064	18.8%
NLD	NLDHR	Den Helder	11603368	28.3%
NLD	NLIJM	Ijmuiden/Velsen	8596072	35.4%
DNK	DKTHN	Thyborøn	8270713	42.1%
BEL	BEZEE	Zeebrugge	6936136	47.8%
NLD	NLVLI	Vlissingen	5294565	52.2%
DNK	DKHIR	Hirtshals	4912687	56.2%
NLD	NLSTD	Stellendam	4708115	60.0%
DNK	DKHVS	Hvide Sande	4693840	63.9%
DNK	DKHAN	Hanstholm	4420382	67.5%
NLD	NLEEM	Eemshaven	4415449	71.1%
BEL	BEOST	Oostende (Ostend)	3700409	74.2%
FRA	FRBOL	Boulogne-sur-Mer	2987734	76.6%
NA	ESRAN	NA	2984158	79.0%
DNK	DKTHM	Them	2898709	81.4%
NLD	NLSCE	Scheveningen	2276542	83.3%
ESP	ESVGO	Vigo	2263775	85.1%
NLD	NLURK	Urk	1834372	86.6%
GBR	GBPHD	Peterhead	1580693	87.9%
NLD	NLLAN	Lauwersoog	1123667	88.9%
FRA	FRDKK	Dunkerque	1020756	89.7%
DNK	DKTHP	Thorup Strand	1020452	90.5%
NOR	NOTOS	Tromsø	1003662	91.3%
DNK	DKTMD	Thorsminde	924451	92.1%
DNK	DKSKA	Skagen	915011	92.9%
NLD	NLDZL	Delfzijl	847960	93.5%
GBR	GBLER	Lerwick	844989	94.2%
NLD	NLBRS	Breskens	734929	94.8%
FRA	FRLTR	Le Tréport	654853	95.4%
GBR	GBFRB	Fraserburgh	620053	95.9%
GBR	GBGSY	Grimsby	584012	96.4%
GBR	GBSCR	Scrabster	559168	96.8%
NLD	NLWRG	Wieringen/Den Oever	545827	97.3%
DNK	DKSTD	Strandby	483644	97.7%
DNK	DKTHY	Thyholm	474192	98.1%
DEU	DECUX	CUXHAVEN	472013	98.4%
FRA	FRDPE	Dieppe	433811	98.8%
FRA	FRRTB	Port-en-Bessin-Huppain	424975	99.1%
GBR	GBSWY	Scalloway	393737	99.5%
FRA	FRLEH	Le Havre	352974	99.8%
GBR	GBSHO	Shoreham	298697	100.0%

Table 6.11 : Landing weights by harbour ranked by order of importance and the cumulative percentage

ctry	fleet	landWt	cum percent
NLD	NLD_>40	26610781	21.9%
NLD	NLD_24-<40	13995172	33.4%
ENG	ENG_>40	10289982	41.9%
BEL	BEL_24-<40	9765451	49.9%
DNK	DNK_18-<24	8667476	57.0%
DNK	DNK_12-<18	6467310	62.4%
NLD	NLD_18-<24	6167729	67.4%
ESP	ESP_>40	5014670	71.6%
DNK	DNK_24-<40	4957155	75.6%
ENG	ENG_24-<40	4000970	78.9%
SCT	SCT_>40	3434020	81.8%
FRA	FRA_10-12	3382899	84.5%
BEL	BEL_18-<24	2985046	87.0%
DEU	DEU_18-<24	2505417	89.1%
DEU	DEU_24-<40	2347464	91.0%
SCT	SCT_18-<24	2058306	92.7%
EST	EST_>40	1886739	94.2%
DNK	DNK_>40	1756014	95.7%
SCT	SCT_24-<40	1610015	97.0%
DNK	DNK_10-<12	1359249	98.1%
ENG	ENG_<10	1248240	99.2%
FRA	FRA_18-24	1031909	100.0%

Table 6.12 : Landing weights by length classes of vessels ranked by order of importance and the cumulative percentage



Pelagic fisheries in the NSEA area

Of the landings in the NSEA area 29 species were classified using the ISCAP codes 35, 36 and 37, under pelagic species. The total landings of these species amounted to 790,420 tonnes. Of this 766,154 (96.7%) was accounted for by just three species, herring, mackerel and sprat. The landings are into ports in Denmark (262540 tonnes), the Netherlands (178450 tonnes), Norway (110006 tonnes), Scotland, Germany and France and Ireland and Sweden. The main Danish ports are Skagen and Thyborøn; the main ports in the Netherlands are IJmuiden/Velsen and Scheveningen. Norway has eight main ports and others that are not mapped to the locodes list.

The fleets catching the bulk of the pelagic fisheries are in order of landed weights, the Danish >40m, the Scottish >40m, the Netherlands >40m, German >40m, Irish >40m and Swedish >40m. A feature of the pelagic fisheries is the mobility of the fleets and the extent to which the flag fleets land into countries other than their own flag country.

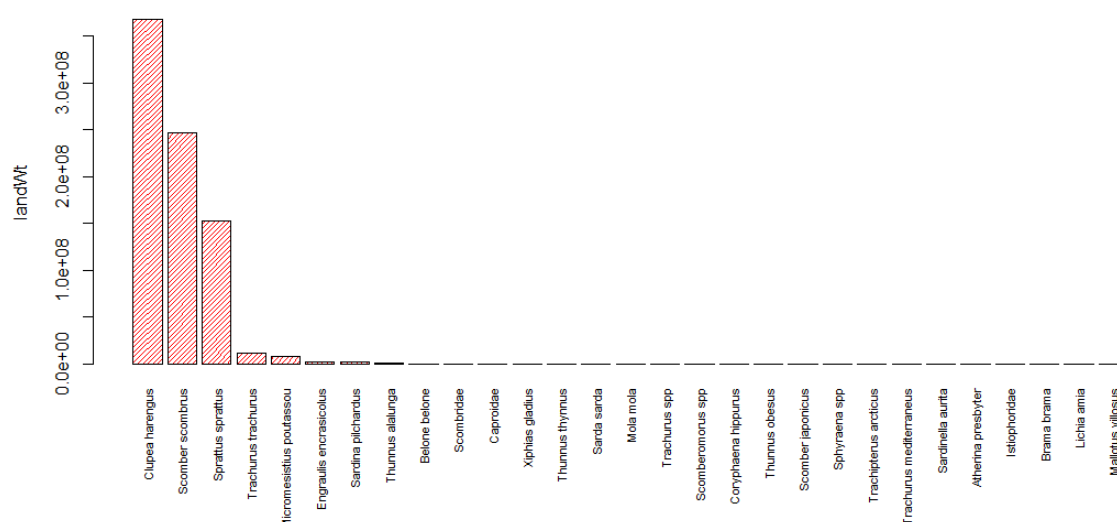


Figure 6.12 : Landing weights by taxon for pelagic species in sub-divisions IIIa, IVabc and VIIId

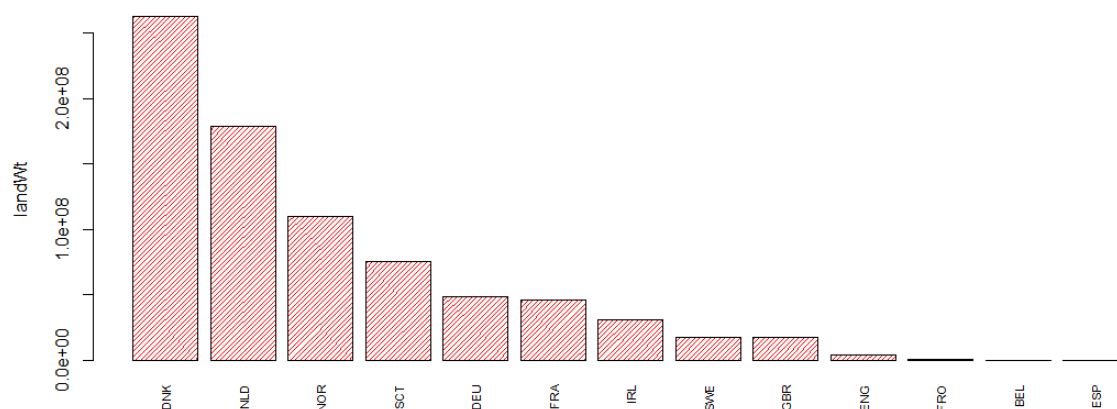


Figure 6.13 : Landing weights by country for pelagic species in sub-divisions IIIa, IVabc and VIIId

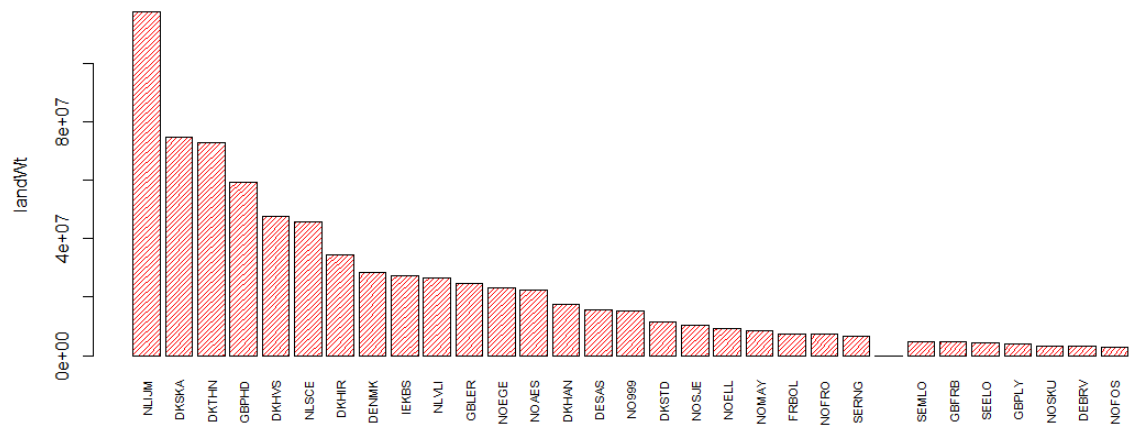


Figure 6.14 : Landing weights by harbour for pelagic species in sub-divisions IIIa, IVabc and VIId

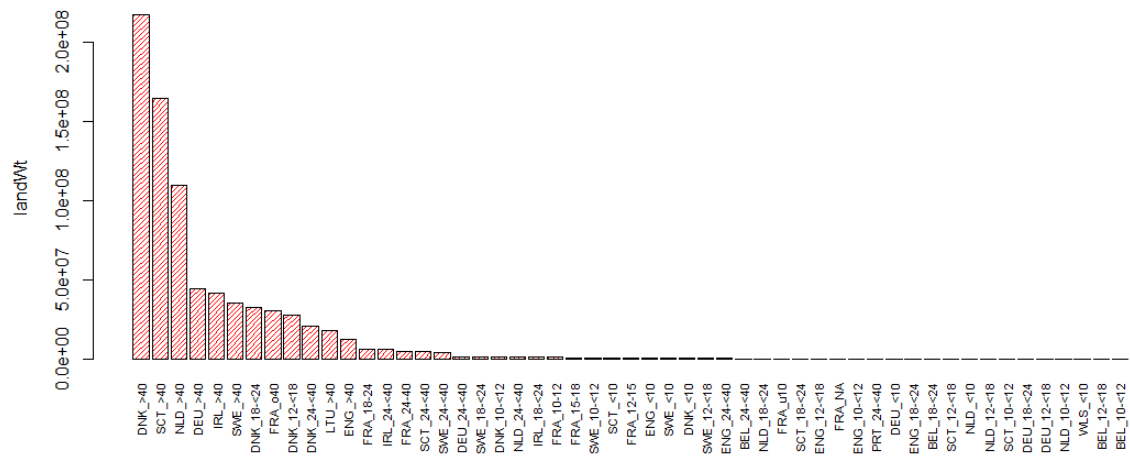


Figure 6.15 : Landing weights by vessel length and country for pelagic species in sub-divisions IIIa, IVabc and VIId

ctry	code	Name	landWt	cum percent
NLD	NLUM	IJmuiden/Velsen	117534796	16.0%
DNK	DKSKA	Skagen	74796937	26.2%
DNK	DKTHN	Thyborøn	72729038	36.0%
GBR	GBPHD	Peterhead	59471939	44.1%
DNK	DKHVS	Hvide Sande	47623344	50.6%
NLD	NLSCE	Scheveningen	45676009	56.8%
DNK	DKHIR	Hirtshals	34636644	61.5%
DEU	DENMK	NEU MUKRAN	28303496	65.4%
IRL	IEKBS	KILLYBEGS	27478927	69.1%
NLD	NLVLI	Vlissingen	26536575	72.7%
GBR	GBLER	Lerwick	24858979	76.1%
NOR	NOEGE	EGERSUND	23196722	79.3%
NOR	NOAES	Ålesund	22427148	82.3%
DNK	DKHAN	Hanstholm	17507927	84.7%
DEU	DESAS	SASSNITZ	15718878	86.8%
NA	NO999	NA	15110409	88.9%
DNK	DKSTD	Strandby	11444048	90.4%
NOR	NOSJE	Selje	10370052	91.9%
NOR	NOELL	Ellingsøy	9322990	93.1%
NOR	NOMAY	MALOEY	8374886	94.3%
FRA	FRBOL	Boulogne-sur-Mer	7399333	95.3%
NOR	NOFRO	Florø	7240066	96.3%
SWE	SERNG	Rönneå	6595506	97.1%
SWE	SEMLO	Mollösund	4901130	97.8%
GBR	GBFRB	Fraserburgh	4580787	98.4%
SWE	SEELO	Ellös	4350706	99.0%
GBR	GBPLY	Plymouth	3948633	99.6%
NOR	NOSKU	Skudeneshavn	3177756	100.0%

Table 6.13 : Landing weights by harbour ranked by order of importance and the cumulative percentage

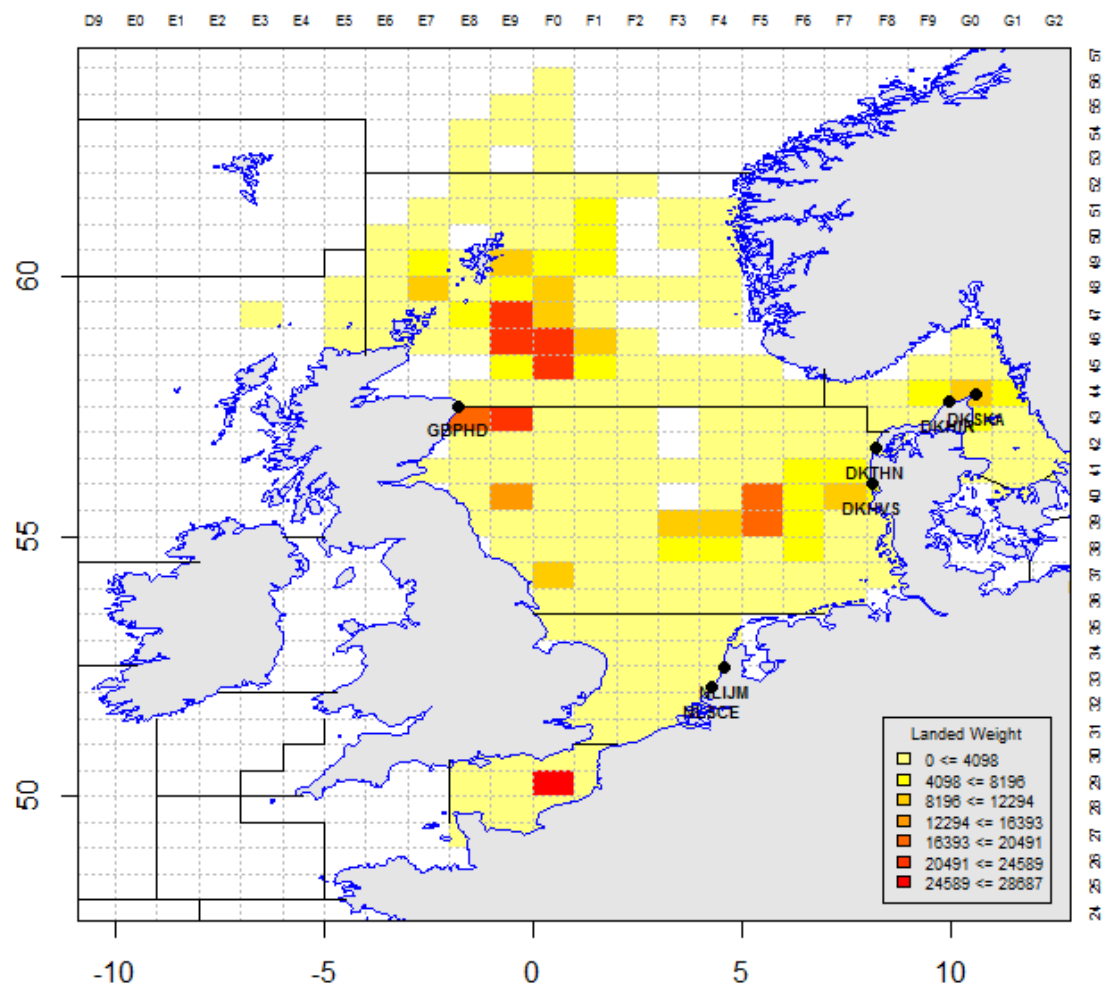


Figure 6.16: Declared landings totals by rectangle, and prominent port locations (UK data not mapped).

1.1.5 NAFO fisheries

Fisheries in the NAFO area are conducted by fleets from Spain and Estonia, both with >40m vessels. landings are to Canada, 1.6 tonnes, Spain 17,484 tonnes and ISL Iceland 246 tonnes. The species landed include Greenland halibut, Sebastes (redfish), Rays, and cod, amongst others.

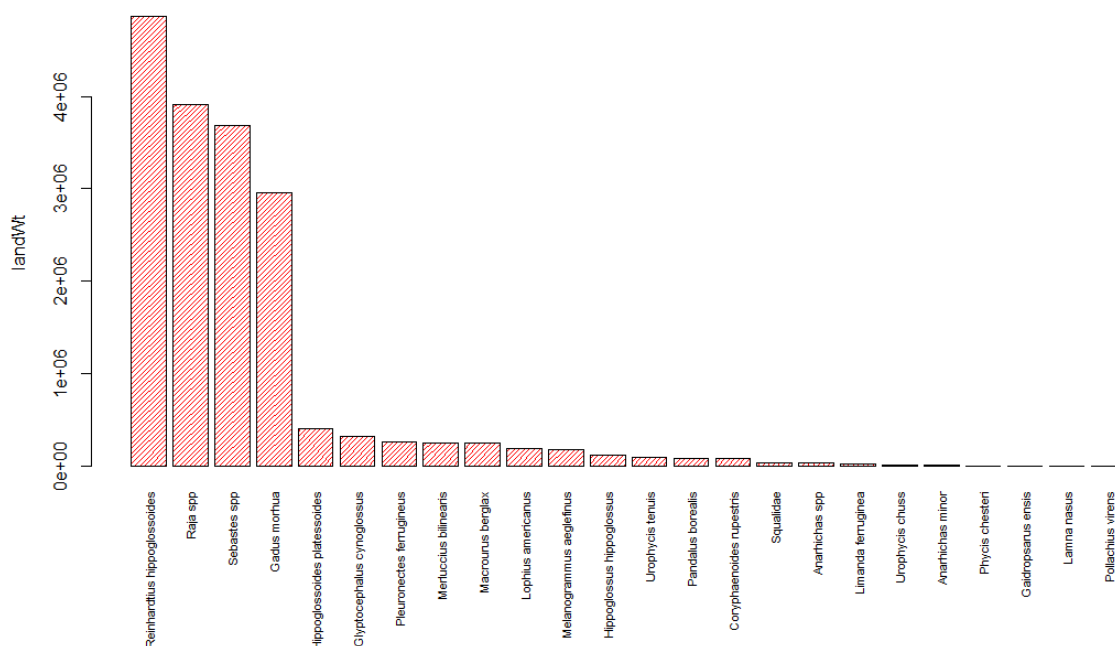


Figure 6.17 : Landing weights by taxon in NAFO area

species	species name	landWt	cum percent
Reinhardtius hippoglossoides	Greenland halibut	4863232	27.4%
Raja spp	Raja rays nei	3915765	49.5%
Sebastes spp	Atlantic redfishes nei	3688083	70.3%
Gadus morhua	Atlantic cod	2957150	87.0%
Hippoglossoides platessoides	Amer. plaice(=Long rough dab)	398301	89.2%
Glyptocephalus cynoglossus	Witch flounder	319076	91.0%
Pleuronectes ferrugineus	NA	260147	92.5%
Merluccius bilinearis	Silver hake	247092	93.9%
Macrourus berglax	Roughhead grenadier	241423	95.3%
Lophius americanus	American angler	184607	96.3%
Melanogrammus aeglefinus	Haddock	177389	97.3%
Hippoglossus hippoglossus	Atlantic halibut	114496	97.9%
Urophycis tenuis	White hake	91443	98.5%
Pandalus borealis	Northern prawn	83650	98.9%
Coryphaenoides rupestris	Roundnose grenadier	77684	99.4%
Squalidae	Dogfish sharks nei	31064	99.5%
Anarhichas spp	Wolffishes(=Catfishes) nei	29692	99.7%
Limanda ferruginea	Yellowtail flounder	24822	99.8%
Urophycis chuss	Red hake	13827	99.9%
Anarhichas minor	Spotted wolffish	8271	100.0%
Phycis chesteri	Longfin hake	2272	100.0%
Gaidropsarus ensis	Threadfin rockling	2233	100.0%
Lamna nasus	Porbeagle	200	100.0%
Pollachius virens	Saithe(=Pollock)	121	100.0%

Table 6.14 : Landing weights by species ranked by order of importance and the cumulative percentage

1.1.6 Eastern Arctic fisheries

Fisheries in the eastern Arctic area are conducted by the fleets of Estonia, France, England, Sweden, Ireland, Poland, and Spain and Germany with vessels of over 40m with lesser contributions by other smaller flag country vessels. Total landings from the EA are 24674 tonnes , the top three species landed being cod, mackerel and *Pandalus borealis* northern prawn. The latter has landings of 4460 tonnes. 15 species account for 99% of the landed weight. The main landing ports are Tromsø and Hammerfest in Norway, Lerwick in Scotland, CUXHAVEN in Germany, Boulogne-sur-Mer in France, KILLYBEGS in Ireland, Hanstholm in Denmark and Vigo and other unmapped ports in Spain.

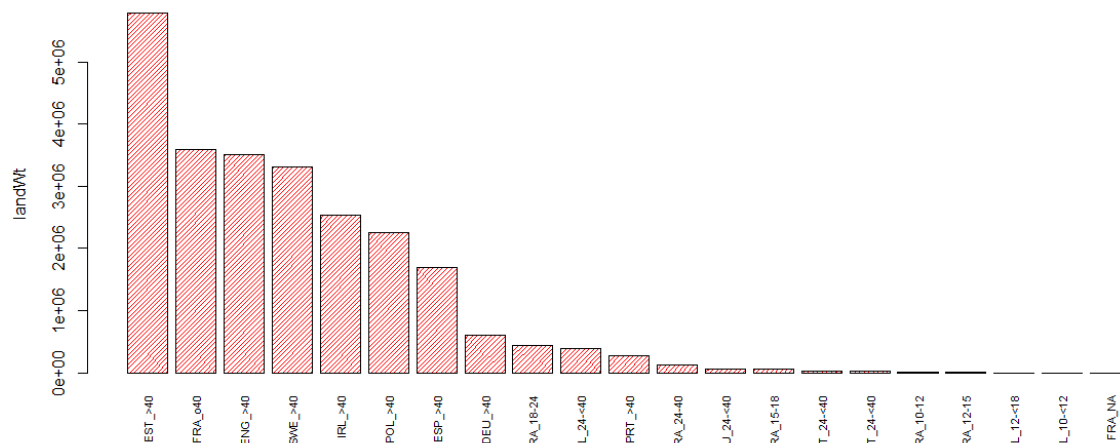


Figure 6.18 : Landing weights by vessel length classes and country in Eastern Arctic area

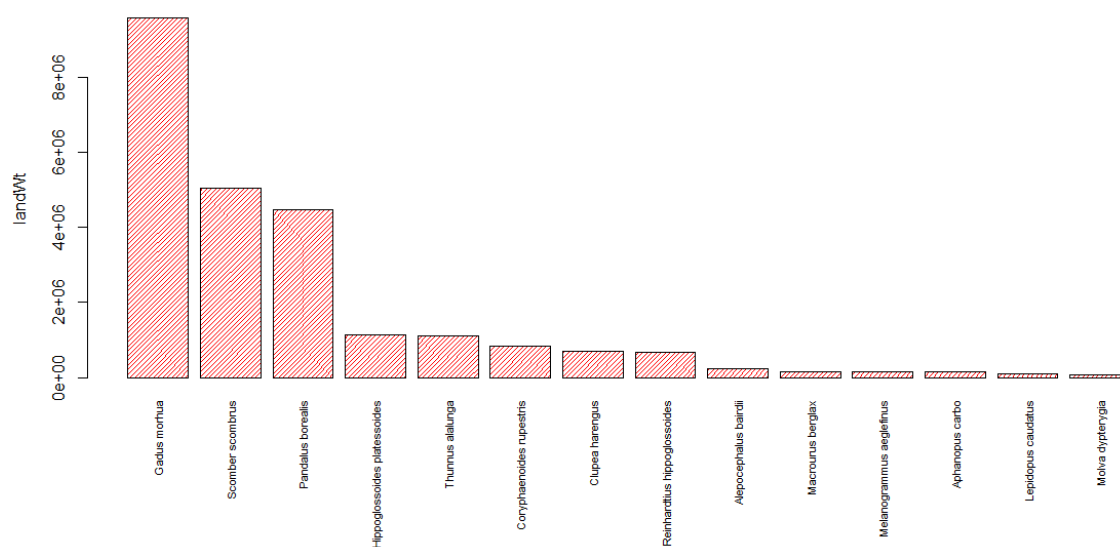


Figure 6.19 : Landing weights by taxon in Eastern Arctic area

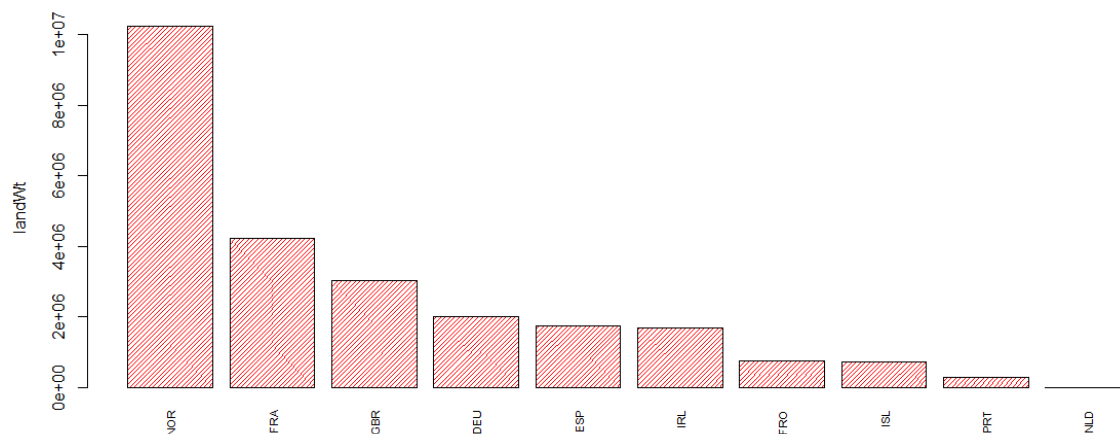


Figure 6.20 : Landing weights by country in Eastern Arctic area

ctry	fleet	landWt	cum percent
EST	EST_>40	5780020	23.4%
FRA	FRA_o40	3588101	38.0%
ENG	ENG_>40	3502829	52.2%
SWE	SWE_>40	3310000	65.6%
IRL	IRL_>40	2534243	75.8%
POL	POL_>40	2252685	85.0%
ESP	ESP_>40	1686933	91.8%
DEU	DEU_>40	599199	94.2%
FRA	FRA_18-24	437655	96.0%
IRL	IRL_24-<40	387717	97.6%
PRT	PRT_>40	269753	98.7%
FRA	FRA_24-40	120422	99.2%
LTU	LTU_24-<40	63749	99.4%
FRA	FRA_15-18	60594	99.7%
PRT	PRT_24-<40	34833	99.8%
SCT	SCT_24-<40	34585	100.0%
FRA	FRA_10-12	4651	100.0%
FRA	FRA_12-15	3765	100.0%
IRL	IRL_12-<18	1393	100.0%
IRL	IRL_10-<12	600	100.0%
FRA	FRA_NA	470	100.0%

Table 6.15 : Landing weights by vessel length classes and country ranked by order of importance and the cumulative percentage

species	species name	landWt	cum percent
Gadus morhua	Atlantic cod	9575763	39.3%
Scomber scombrus	Atlantic mackerel	5035050	59.9%
Pandalus borealis	Northern prawn	4460139	78.2%
Hippoglossoides platessoides	Amer. plaice(=Long rough dab)	1126905	82.9%
Thunnus alalunga	Albacore	1104026	87.4%
Coryphaenoides rupestris	Roundnose grenadier	832042	90.8%
Clupea harengus	Atlantic herring	705567	93.7%
Reinhardtius hippoglossoides	Greenland halibut	678179	96.5%
Alepocephalus bairdii	Baird's slickhead	228082	97.4%
Macrourus berglax	Roughhead grenadier	162892	98.1%
Melanogrammus aeglefinus	Haddock	149532	98.7%
Aphanopus carbo	Black scabbardfish	149495	99.3%
Lepidopus caudatus	Silver scabbardfish	88305	99.7%
Molva dypterygia	Blue ling	80662	100.0%

Table 6.16 : Landing weights by vessel length classes and country ranked by order of importance and the cumulative percentage

ctry	code	name	landWt	cum percent
NOR	NOTOS	Tromsø	6012180	25.3%
NOR	NOHFT	Hammerfest	3617040	40.4%
GBR	GBLER	Lerwick	3015504	53.1%
DEU	DECUX	CUXHAVEN	2006250	61.5%
FRA	FRBOL	Boulogne-sur-Mer	1719414	68.8%
IRL	IEKBS	KILLYBEGS	1239546	74.0%
DNK	DKHAN	Hanstholm	1153848	78.8%
NA	ESRAN	NA	901032	82.6%
ESP	ESVGO	Vigo	820734	86.0%
FRO	FOFUG	FUGLEFJORD	737797	89.1%
ISL	ISAKU	Akureyri	717169	92.2%
NOR	NOBJF	Båtsfjord	443389	94.0%
NA	NO999	NA	430000	95.8%
IRL	IECTB	Castletown Bearhave	375367	97.4%
NOR	NOASV	AUSTEVOLL	350000	98.9%
PRT	PTAVE	Aveiro	269753	100.0%

Table 6.17: Landing weights by harbor ranked by order of importance and the cumulative percentage

Landings abroad

Landings abroad can be tabulated as the vessel flag country (vertical axis) against the landing country (horizontal axis) (table 6.19). This shows the extent to which flag country vessels are landed into non flag country ports. It can be seen the some countries draw in substantial landings from the flag fleets of many other countries, conversely the extent to which flag vessels land abroad. The extent to which countries from the region land into non EU recipient countries such as Norway, Faroes and Iceland is also apparent. Across all countries with data available to the RCMs in 2015 total landings are 3419225 tonnes, of which 781454 tonnes (22.8%) are landing into countries that are not the flag country of the vessel.

The number of trip records in the 2014 RDB cs data (table 6.20) would suggest that the majority of samples held within the RDB are samples where the vessel flag country is the same as the landings country. This suggests that either the RDB does not allow the upload of data where the landing country is not the same as the vessel flag country, or that there is very little sampling on foreign vessels occurring.

	BEL	DEU	DNK	ENG	ESP	EST	FIN	FRA	FRO	GBR	IMN	IRL	ISL	LTU	LVA	NIR	NLD	NOR	POL	PRT	SCT	SWE	WLS
BEL	21311	NA	19	NA	NA	NA	NA	115	NA	670	NA	NA	NA	NA	NA	NA	4066	NA	NA	NA	NA	NA	NA
DEU	NA	62377	30965	NA	564	NA	NA	NA	NA	199	NA	203	5510	NA	NA	NA	100359	309	560	NA	NA	1565	NA
DNK	NA	40576	554556	NA	NA	NA	NA	1021	5094	14474	NA	7296	9724	NA	NA	NA	12384	37111	3543	NA	NA	4939	NA
ENG	NA	9	2168	87288	1741	NA	NA	2898	NA	NA	4136	3539	54	NA	NA	8	26644	7153	NA	NA	16965	NA	1922
ESP	NA	NA	NA	NA	274247	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EST	NA	NA	1	NA	NA	53005	NA	NA	NA	NA	NA	NA	1793	NA	1012	NA	NA	5542	187	NA	NA	125	NA
FRA	NA	NA	NA	NA	NA	NA	NA	424928	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
IRL	NA	NA	9492	NA	913	NA	NA	4010	15717	13133	NA	218565	NA	NA	NA	NA	1312	10775	NA	NA	NA	NA	NA
LTU	NA	167	9944	NA	NA	808	NA	NA	NA	NA	NA	NA	1311	1853	1443	NA	29268	64	66	NA	NA	296	NA
LVA	NA	NA	370	NA	NA	NA	NA	NA	NA	NA	NA	NA	1083	NA	58487	NA	NA	NA	1045	NA	NA	NA	NA
NLD	443	2	5746	NA	NA	NA	NA	3368	NA	161	NA	NA	NA	NA	NA	NA	254082	16	NA	NA	NA	7	NA
POL	NA	4407	8691	NA	NA	NA	NA	NA	NA	NA	NA	NA	1218	NA	1259	NA	NA	1164	107156	NA	NA	2330	NA
PRT	NA	NA	NA	NA	16077	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	99118	NA	NA	NA	NA
SCT	NA	1335	26776	8813	2340	NA	NA	NA	NA	2016	8828	NA	NA	NA	NA	407	2822	130015	NA	NA	294975	NA	1018
SWE	NA	NA	84248	NA	NA	0	NA	NA	2942	NA	NA	NA	NA	NA	NA	NA	1134	144	NA	NA	83431	NA	NA
WLS	NA	NA	NA	1218	91	NA	NA	NA	NA	NA	NA	488	NA	NA	NA	10	NA	NA	NA	NA	14	NA	6111

Table 6.19 : Landings by flag countries (rows) into landing country (columns) – all regions, tonnes.

	BEL	DEU	DNK	ENG	ESP	EST	FIN	IRL	ISL	LTU	LVA	NIR	NLD	NOR	POL	PRT	SCT	SWE	TS1	WLS
BEL	66	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DEU	0	142	11	0	0	0	0	0	6	0	0	0	9	0	0	0	0	0	0	0
DNK	0	0	1172	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ENG	0	0	0	1875	0	0	0	0	0	0	0	0	0	0	0	0	33	0	0	1
ESP	0	0	0	0	2954	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EST	0	0	0	0	0	3181	0	0	23	0	0	0	0	0	0	0	0	0	0	0
FIN	0	0	0	0	0	0	337	0	0	0	0	0	0	0	0	0	0	0	0	0
GBR	0	0	0	8	0	0	0	0	0	0	0	491	0	0	0	0	0	0	3	0
IRL	0	0	0	0	0	0	0	662	0	0	0	0	0	0	0	0	0	0	3	0
LTU	0	1	0	0	0	0	0	0	3	76	0	0	0	4	0	0	0	0	0	0
LVA	0	0	0	0	0	0	0	0	4	0	314	0	0	0	6	0	0	0	0	0
NIR	0	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
NLD	0	0	0	0	0	0	0	0	0	0	0	0	780	0	0	0	0	0	0	0
POL	0	0	0	0	0	0	0	0	1	0	0	0	0	0	232	0	0	0	0	0
PRT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2018	0	0	0	0
SCT	0	0	0	21	0	0	0	0	0	0	0	0	0	0	0	0	1015	0	0	0
SWE	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	718	0	0
WLS	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13

Table 6.20 : Number of trip records in the RDB for 2014 by flag countries (rows) against landing country (columns)

Landings Abroad			
RCM	NS&EA	2015	RCM NSEA recommends that present situation in the sampling and estimation of landings abroad is reviewed and that the ICES data centre ensures that the RDB can hold accurate data on the landings abroad fraction of the catch.
justification			Landings abroad constitute a substantial fraction of the landed catch, a fraction which needs to be sampled adequately and for which estimates are required. The number of records within the RDB would suggest either that foreign landings cannot be uploaded and stored adequately, or that there is very little sampling of foreign vessels occurring.
Follow-up actions needed			ICES data centre to ensure that sampling data derived from landings abroad can be uploaded, and that these data can be stored correctly within the RDB. WGCATCH to review the present situation in the sampling of foreign vessels, and the methodology employed to estimate landings abroad.
Responsible persons for follow-up actions			ICES data centre, WGCATCH
Time frame (Deadline)			To report back to the RCM in 2016.

Upload logs – summary of the logs

RDB Datacall included request to submit upload logs stating the upload status. This gives RCM an opportunity to understand what data is uploaded and whether it is fully uploaded or not and what problem appeared during the upload. All countries need to submit upload logs even in case of full successful upload. The upload logs need to be detailed enough to support the investigation of errors, i.e. metiers that were unable to upload have to be listed. If Upload log is made available for example through FishFrame tools, it would be helpful during the compilation of the regional data.

Upload logs were submitted by Portugal, Belgium, Estonia, Scotland, England and Wales, Ireland (detail in annex 5). Some countries did not submit upload logs due to different problems. Some contacted chairs directly.

Extracts from upload logs:

Data type: Commercial sampling (CS)

1. There were overlaps with the reported problems. For example Portugal and Estonia reported problems with NAFO area and statistical rectangles and coordinates.
2. Two countries stated that for at sea sampling the sample weight was mandatory but not all fish are weighed and to be able to upload, the weight has to be calculated. That may lead to misunderstandings when calculated values are treated as raw data. Data were not uploaded.
3. Nephrops are sampled from the catch, however the catch categories only allow L (landings) or D (discards). Therefore most Nephrops data could not be uploaded. This was solved just before the RCM meeting. Third option (Catch) was added to the catch category field.
4. Some species are not measured strictly according to the available length codes (mm, scm, cm). There are species measured in 2cm and 3 cm. Data on these species were not uploaded.
5. National data was not ready for the upload deadline.
6. Not all samples could be matched to a metier or size category.
7. Age structures collected but not all aged or impossible to age therefore TR, HH, CA incomplete.
8. The maturity data are temporarily not available due to upgrading of our national database.
9. Metier and area association errors in RDB.

Data type: Landings and effort (CL, CE)

1. Two countries reported full upload.
2. Species *Chionoecetes opilio* missing from species coding list.
3. Metiers and area association errors in RDB.
4. Two countries reported on disallowed metiers and suggested on improving the metier list.
5. Definitions of kW-days need to be clarified. The data call does not specify whether kWdays refer to fishing days or days-at-sea, we used fishing days. It is also not specified how to deal with vessels that have effort in more than one rectangle or metier in a day – should each rectangle be assigned a fishing day? Should the effort be allocated pro rata? We chose to assign a full fishing day to each effort record. Note that it is not possible to provide days-at-sea by rectangle as this is not recorded in the logbooks.
6. The number of trips were assigned according to the rectangle with the greatest effort as requested, note that this method of assigning leads to a number of rectangles with 0 trips. The upload functionality would not allow upload of 0 trips, so these were changed to 999.
7. Mismatch in the datacall and FishFrame format. The data call asks for landings in tonnes, however the data exchange format definition specifies the landings in kg. The data exchange format definition was followed.
8. The landing category (human consumption / industrial) is not recorded in the logbooks, all landings were assigned to “HUC”
9. The database checks that certain metiers are only allowed in certain areas caused problems both in CS and in CL, CE. Because no-one told the fishermen this, they might use a certain metier in a certain area that the database doesn't like. We had to 'adjust' a large number of metiers in order to pass this validation. Solution: Relax the metier/area validation or add option to add for metier 'metier_excl' or for other mandatory variables 'x_excl' so it can still be uploaded but you have to add explanation.
10. Two countries reported problem with under-10m vessel effort and metiers: Under-10m effort could not be provided

Taking into account upload logs
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RCM NS&EA 2015 Recommendation	RCM NSEA recommends that the upload logs messages from the 2015 upload exercise be taken into account when agreeing on regional reference lists for the rDB
justification	There are a variety of errors reported by the upload logs that need to be sorted, like the different length codes used, the need to define codes of procedure for e.g. KW days and how to deal with missing or incomplete information.
Follow-up actions needed	Reference list group and WKRDB.
Responsible persons for follow-up actions	WKRDB and RCM NS&EA
Time frame (Deadline)	Mid-2016 for the upload for RCM 2016.

Age reading

The readings number of main species by ICES areas where 2 countries minimum participated to the readings is presented table 3.21. The French data were added to the data from RDB. The Spanish and Portuguese data were not available during the RCM NSEA 2015 meeting. They concerned the species *Gadus morhua* and *Sebastes mentella* in the ICES area XIV. Moreover, the data from the non EU countries such as Norway, Faeroes and Iceland are not available to the RCM. Cod is the first species with 24825 otolith readings, in the ICES areas IVa and IIIa mainly, followed by plaice with 17323 readings and herring with 13333 readings.

Species by ICES area	BEL	DEU	DNK	ENG	FRA	IRL	NIR	NLD	POL	SCT	SWE	WLS	Total
Clupea harengus	431	4210	196	356	20			1566		1604	4980		13363
2						20							20
2a			52					17					69
2b								63					63
3an			363								2898		3261
3as			670								2082		2752
4a		257	916					1072		1481			3726
4b			2209		193			110		123			2635
4c				196	87			22					305
7d		174			76			282					532
Dicentrarchus labrax				820	98								918
4c				490									490
7d				330	98								428
Gadus morhua	1287	3797	6456	2487	567		2	734	407	4892	4158	38	24825
14b		1217											1217
2b		1252							407				1659
3an		807	2925								2681		6413
3as			1406								1477		2883
4a		51	877	677						4481			6086
4b	180	470	1248	1121	39		2	242		411			3713
4c	615			145	116			455				38	1369
7d	492			544	412			37					1485
Glyptocephalus cynoglossus			647	24						324	1272		2267
3an			589								1272		1861
3as			11										11
4a			47	24						252			323
4b										72			72
Lepidorhombus whiffiagonis				43						862			905
4a				43						862			905
Limanda limanda	701	991	1520		503			370					4085
3an			633										633
3as			805										805
4b	168	483	82		195			133					1061
4c	533	508			150			237					1428
7d					158								158
Lophius piscatorius			78	77						1276			1431
3an			5										5
3as			1										1
4a			65	77						1129			1271
4b			7							147			154
Melanogrammus aeglefinus	937	2498	1207	82			10			4738			9472
2b		259											259
3a		260											260
3an			1369										1369
3as			9										9
4a		90	529	320						4276			5215
4b		328	591	887	82		10			462			2360

Table 6.21 : Number of age readings by country and by ICES area for main species from RDB 2015 and French data.

Species by ICES area	BEL	DEU	DNK	ENG	FRA	IRL	NIR	NLD	POL	SCT	SWE	WLS	Total
Merlangius merlangus	168	710	1391	1931			27			5458			9685
3an			527										527
3as			86										86
4a		168	45	336						4721			5270
4b			52	971	373		27			737			2160
4c				52	293								345
7d				32	1265								1297
Merluccius merluccius			424							73			497
3an			205										205
3as			31										31
4a			155							57			212
4b			33							16			49
Microstomus kitt	458		266	516	72		17	160		131			1620
3an			22										22
4a			20	4									24
4b		133	224	505			17	105		131			1115
4c		325						55					380
7d				7	72								79
Platichthys flesus	41		1					673					715
3as			1										1
4b								38					38
4c		41						635					676
Pleuronectes platessa	2830	1632	5526	1431	2197			2468			1239		17323
3a								47					47
3an			2796								595		3391
3as			1118								644		1762
4a					286								286
4b		242	1050	1612	2	367		1741					5014
4c		968	582		206			680					2436
7d		1620		1429	1338								4387
Pollachius virens		1639	1704	380	402					4017			8142
3a		116											116
3an			930										930
3as			7										7
4a		1523	308	380	402					3934			6547
4b			459							83			542

Table 6.21 (continued) : Number of age readings by country and by ICES area for main species from RDB 2015 and French data.

Species by ICES area	BEL	DEU	DNK	ENG	FRA	IRL	NIR	NLD	POL	SCT	SWE	WLS	Total
Scomber scombrus	509	250	72			575		201		945			2552
2a			93					22					115
4a		509	157			575		155		945			2341
4b				72									72
7d								24					24
Scophthalmus maximus			11		38			567					616
3an			4										4
3as			6										6
4b			1		2			476					479
4c					4			91					95
7d					32								32
Scophthalmus rhombus			20		22			603					645
3an			2										2
3as			18										18
4b					2			317					319
4c					3			286					289
7d					17								17
Solea solea	2145	800	460	1831	1533			2675					9444
3an			81										81
3as			167										167
4b		173	431	212	3			893					1712
4c		856	369		667	51		1782					3725
7d		1116		1164	1479								3759
Sprattus sprattus			6089		174					752			7015
3an			608							752			1360
3as			650										650
4b			4831		80								4911
4c					40								40
7d					54								54

Figure 6.21 (continued): Number of age readings by country and by ICES area for main species from RDB 2015 and French data.

To compare the contribution of each country between the landings (“flag landings” from RDB plus the French data) and the number of readings (from RDB plus the French data), the difference of percentages “%Reading-%landings” was used. This analysis was divided in two parts: North Sea (ICES areas: VIIId, IV and III) and Eastern Arctic (ICES areas: I, II and XIV).

	BEL	DEU	DNK	ENG	FRA	IRL	LTU	NLD	SCT	SWE	WLS	Total
<i>Clupea harengus</i>	0	-8	-7	-1	2	0	-3	-11	-1	29	0	332259937
<i>Scomber scombrus</i>	0	19	-3	2	0	4	-4	-3	-15	0	0	232461931
<i>Sprattus sprattus</i>	0	-1	-7	0	2	0	0	-2	0	7	0	142798823
<i>Pleuronectes platessa</i>	6	4	8	-9	12	0	0	-24	-5	7	0	80958671
<i>Melanogrammus aeglefinus</i>	0	2	19	1	1	0	0	0	-22	-1	0	34140870
<i>Gadus morhua</i>	1	-2	-1	1	2	0	0	-2	-14	16	0	28905797
<i>Pollachius virens</i>	0	-18	0	-9	5	0	0	0	28	-5	0	23194232
<i>Solea solea</i>	6	4	2	10	15	0	0	-35	0	0	0	14258406
<i>Merlangius merlangus</i>	-1	2	-7	0	19	0	0	-8	-5	0	0	13985910
<i>Merluccius merluccius</i>	-1	-9	49	-25	0	0	0	-1	-13	-1	0	8417721
<i>Lophius piscatorius</i>	-4	0	-12	-1	0	0	0	-1	20	-1	0	8066024
<i>Limanda limanda</i>	9	19	21	-9	12	0	0	-50	-2	0	0	5473277
<i>Microstomus kitt</i>	5	-2	-9	16	4	0	0	-2	-12	0	0	3491058
<i>Glyptocephalus cynoglossus</i>	-1	0	-32	-2	0	0	0	0	-10	46	0	2461851
<i>Platichthys flesus</i>	-16	-2	-2	-3	-1	0	0	24	0	0	0	1794768
<i>Lepidorhombus whiffiagonis</i>	0	0	-2	1	0	0	0	0	2	0	0	1522657
<i>Scophthalmus rhombus</i>	-18	-5	-5	-9	3	0	0	36	-2	0	0	1431291
<i>Scophthalmus maximus</i>	-34	-19	-45	0	6	0	0	92	0	0	0	1068553
<i>Dicentrarchus labrax</i>	-4	0	0	24	4	0	0	-24	0	0	0	963460

Table 6.22 : %Reading-%landings for main species by countries for “North Sea” (ICES areas: VIIId, IV and III). Green line showed that for one species, landing proportion was higher than readings proportion and contrary for blue line.

	DEU	DNK	ENG	ESP*	EST	FRA	IRL	LTU	LVA	NLD	POL	PRT*	SCT	SWE	Total
<i>Gadus morhua</i>	31	0	-12	-9	0	0	0	0	0	0	-4	-5	0	0	27821948
<i>Clupea harengus</i>	-1	-6	0	0	0	0	5	0	0	10	0	0	-8	0	27296288
<i>Scomber scombrus</i>	0	34	0	0	0	0	-5	-3	0	-6	0	0	-11	-9	18134746
<i>Sebastes mentella</i>	50	0	0	-17	0	0	0	-15	-11	0	-1	-5	0	0	4834864
<i>Melanogrammus aeglefinus</i>	32	0	-8	-7	0	0	0	0	0	0	-15	-3	0	0	811080

Table 3.23: %Reading-%landings for main species by countries for “North Sea” (ICES areas: VIIId, IV and III). They are no Spanish and Portuguese data for *Gadus morhua* and *Sebastes mentella* in the ICES area XIV. Green line showed that for one species, landing proportion was higher than readings proportion and contrary for blue line.

There are precautions to take to interpret these tables because this analysis does not take into account samples distribution during the year nor absolute figures. Moreover, the contribution by country could be influenced by the calcified structures readings by one country of foreign flag country and it is not possible to identify foreign samples read by any country. However, these tables could be a help to identify the potential exchange of calcified structure, as part of bilateral or multilateral agreement, especially when one country read only few otoliths. For example, 3 countries participated to the ageing of *Scophthalmus rhombus* with 11 otoliths from Denmark, 38 from France and 567 from the Netherlands.

7. Responses to the Commission questions on Sampling

The Commission asked a number of specific questions of the RCM NS&EA related to sampling; these are addressed here:

Data quality: proposed indicators as an alternative to CVs?

As the WKPRECISE report makes clear (ICES 2009), the use of relative standard errors (CVs) is legitimate provided they are obtained using probability based selection methods, and that they are related to the final estimates at national and regional level. As used under the DCF, as a measure of precision of length data obtained by quota sampling of metiers, CVs had no statistical validity, their calculation was flawed and they were of no practical use as any sort of a data quality indicator.

With sampling designs employing probability based selection methods a range of quality indicators are readily available to assess the functioning of the design and the quality of the data obtained e.g. numbers of PSUs, design effect, bias, variance, standard errors, effective sample size, coverage rates, non-response and refusal rates. Each of these are informative of particular aspects of the sampling design or the data collected. However there is no single parameter that is appropriate as an overarching indicator of data quality that can be easily interpreted by the layman. In recognition of this fact, one of the proposed roles of the RCG, as set out in the NSEA 2012 report “Oostende Declaration” is to include a better informed scrutiny process for the evaluation of sampling designs and data quality.

Design-based sampling: the issue of over sampling and under sampling should be addressed and how it could be overcome? Is it possible to make a comparison of the results of both methods and the problems encountered and make an analysis of the pros and cons of design based sampling and metier based sampling?

Design based sampling offers methods to achieve optimal sampling levels across stratified designs where the variability in the strata are known or can be estimated. Section 2.4. of the PICS 2 report (ICES 2012) gives a concise and clear explanation: “In general, the optimum sampling allocation that minimizes the stratified estimate of the mean, \bar{Y}_{st} , for a fixed total sample size, n , is given by (Cochran, 1977, page 98):

$$n_h^{opt} = n \frac{N_h S_h}{\sum N_h S_h},$$

where N_h is the number of primary sampling units in stratum h and S_h is the expected (i.e. “true”) standard deviation for stratum h . That is, more effort is allocated to those strata that are larger (N_h) and/or are more variable (S_h).”

This section goes on to point out that in the fisheries context sampling typically has multiple populations of interest e.g. age, weight, length, sex, maturity, and is required to generate estimates for multiple domains of interest e.g. species, stocks, time periods, areas, landings, discards, bycatch. The variability in these populations is diverse, and often not correlated. As a consequence an optimal allocation of sampling effort for one objective may be far from optimal for another objective. Therefore to answer the question of over sampling and under sampling one would be required to be able to frame the question as oversampling or under sampling of what?

Given the complex situation in fisheries sampling where these are multiple populations of interest, the PICS 2 report points out that “a more practical sampling allocation that often performs well for surveys with multiple objectives is to allocate effort proportional to stratum size, or:

$$n_h(prop) = n \frac{N_h}{\sum N_h}.$$

The term “survey” is used here in the context of survey sampling, not in the more narrow definition of an RV survey. Thus if estimates of the variability are known across strata, effort allocation can be optimised proportional to the largest and most diverse strata; where estimates of variance are not known allocation proportional to stratum size is often best. The N in these situations are the primary sampling units, sites and days in the on-shore context and vessels in the at-sea context.

Another way to assess the suitability of a sampling design for multiple objectives is to calculate the design effect *deff*. The design effect is the ratio of the variance of the estimates achieved from a particular design, over the variance of a simple random sample (Kish 1965). Comparison of the design effect of different sampling designs, which for example have different allocations of sampling effort across strata can then be made. In that way a design that provides the best use of sampling effort to achieve reasonable estimates for multiple domains can be identified. The fishPi project aims to evaluate potential sampling designs for

multiple species sampling, based on simulating the sampling of landed catch from the logbook and sales note data for 2013 and 2014.

Probability based selection methods where one is selecting at random n from a possible N sampling elements allow for the generation of unbiased estimates and the calculation of reliable measures of variability. The central limit theorem basically states that regardless of the underlying distribution of the population from which the sample is drawn, the distribution of a sample mean around the population mean will be normally distributed with the variance equal to the standard error of the sample mean (Jessen 1978). The design based sampling which employs probability selection at each level in the multistage sampling of clustered data that are typically required to obtain the fish which is sampled, can therefore results in unbiased estimates with reliable measures of precision.

In contrast quota based sampling is the selection of a sampling unit because it has particular characteristics (e.g. sampling the fish from the catch of a vessel operating a particular metiers).

A summary of the pros and cons of quota sampling is cited by Moser and Kalton (1993) in "Survey methods in social investigation p 133".

The main argument against quota sampling:

- a) it is not possible to estimate sampling errors with quota sampling
- b) sampling within quota groups may be unrepresentative
- c) quota groups can be ill defined and their identification left to the samples judgement
- d) control of fieldwork is difficult.

The main arguments for quota sampling are that:

- a) quota sampling is can be less costly
- b) easy administratively
- c) can be conducted more quickly
- d) independent of sampling frames

The situation can therefore be summarised in that if cheap, easily administered, quick estimates are required quota sampling can be used. However these estimates may well be biased and they have no credible measure of precision. If one considered that fisheries management needs to be based on data that is unbiased and has reliable measures of precision then probability based methods should be used.

8. Proposal for task sharing and criteria for joint surveys

Like in the present legislation, the proposal of a new EU-MAP regulation (which ultimately will replace the current DCF Regulation) contains the provision on the list of mandatory surveys to be carried by MS in support of i.a. the CFP and MSFD – support to stocks assessment, ecosystem indicators, plastic contaminants and other. This proposed new regulation provides also for rules of participation in surveys, including cost sharing between MS based on the relative shares in respective stock exploitation.

There are currently six surveys in support of stock assessment conducted annually in the Baltic Sea. The group discussed the possible model for sharing the surveys costs between MS concerned, pointing out that a number of elements need to be taken into account, including, i.e:

- Stock by stock approach (with more than one stock targeted during survey),
- Relative shares in the catch possibilities (TAC),
- Relevance of the survey for MS not involved so far.

The group agreed that before setting the surveys' cost sharing model an analysis of the structure and distribution of the cost between MS regarding surveys currently conducted in the Baltic Sea is needed. The chair of the RCM Baltic has offered to collect and compile the data required for such an analysis to be performed before the RCM Baltic meeting next year.

Furthermore, before deciding on key of sharing costs related to surveys, the feedback from an end-user is required. The group decided to request ICES, through the Commission, for a confirmation on what surveys in the Baltic Sea are required to meet the ICES needs for providing advice in support of the Common Fisheries Policy.

9. Amendments needed to NP for 2016

No necessary amendments to the NPs 2016 were identified by RCM NS&EA.

10. Future funding mechanisms to continue strengthening regional cooperation

According to the Regulation (EU) No 508/2014 of the European Parliament and of the Council article 86, under the direct management, Commission has funding available for the support of “*cooperation activities between Member States in the field of data collection, including those between the various regional stakeholders, and including the setting-up and running of regionalised databases for the storage, management and use of data which will benefit regional cooperation and improve data collection and management activities as well as improving scientific expertise in support of fisheries management*”. Therefore, it is possible for the Commission to fund initiatives suggested by the RCM/RCG's.

The RCM NS&EA discussed various studies that could improve data collection and especially improve cooperation, coordination and the quality assurance.

The following study proposals were agreed:

Study proposal on

”Development of the Regional DataBase for support of RCM/RCGs and other user”

(Priority 1)

Background:

From the European Commission there is focus on regional coordination and cooperation, and using the Regional DataBase (RDB) have huge cost-benefit advantages for the regions. However, the full potential of the RDB should be used, and this can be done by developing the needed functionalities. With focus on coordinating the sampling of all relevant species in the regions, which are using the RDB, it is essential to draw conclusions based on the comprehensive data in the RDB. Therefore it is important that the RDB fully support the needs of the RCM/RCGs. This includes common harmonised quality checks and data analysis reports. Furthermore the RDB can support countries in raising/estimating national biologic data, landings and effort for further international raising in InterCatch for ICES stock assessment and advice to EC. But ensuring the right raising/estimation of the existing methods and development a new statistical method are needed to support the countries in reducing the resources spend in raising/estimating data for data calls.

Indicative budget: € 450,000

Development

The main fields for development in 2016-17 are identified by the RDB-Steering Committee and presented in no specific order of priority:

1. Development of additional reports for analysis and data tabulating to support regional coordination. (10 % of total budget)

Outputs: Specifications of reports, programming development

Development of output reports which provide:

- More advanced standard reports used by the RCM/RCGs
- Reports Overview of data status by region; data coverage;
- Overview of completeness of data uploads
- Support the planning of future regional based sampling schemes;
- Overview of potential areas for task sharing between member states.

2. Testing of trial species (12 % of total budget)

Testing of trial species from different stock assessment working groups for national raising/estimations, by borrowing age-length keys from own and/or other countries and correction of eventual issues. This should be done in two phases: Phase A: Where one or two stocks should make a comprehensive test of the system and corrections should be made. Phase B: Several representative stocks should be tested throughout the system for raising/estimation and eventually corrections should be made.

Outputs: Test plan, tests, coordination, reports, comparisons, issues, solutions, corrections

- All data submitters for the selected stocks raise data in the RDB in two phases
- Output compared and corrections made where needed in two phases

3. Extended data logging - what have been uploaded when (12 % of total budget)

Implement a functionality, which makes it possible to see down to details what have been imported when, full data auditing
Outputs: Specification of functionalities, development, implementation, test

- Identify what is the optimal solution for this. User and time stamp in relevant tables or expand the existing logging. Develop functionalities that allows countries and end-users to see all details of what have been uploaded when. As it is now it is now it is possible to see the first part of data uploaded by persons.

4. Implement quality control functionality (12 % of total budget)

Taking a starting point in the quality control checks developed under the fishPi project. Identifying the best way to incorporate the checks and implement them. The functionality will allow the users to identify differences within a country and across the countries.

Outputs: Technical report, Technical meetings/workshops covering all regions, development and implementation of methods

- All relevant checks on country level and across countries should be documented
- All relevant checks should be developed and implemented

5. Explore options and cost implications of implementing of external tools (i.e. COST) in the RDB (10% of total budget)

Outputs: Technical report, Technical Workshop(s), conceptual development

Such analysis should include the following elements:

- An inventory to collate and examine the tools present but also tools missing
- Specification of relevant issues regarding data and format
- Conceptual development of an interface to RDB

6. Requirements and automation of Data calls procedures. (12% of total Budget)

Analysis of the different data calls and identify which can be extracted directly from the RDB, but also identify which data calls can be extracted from the RDB by changes to the RDB.

Outputs: Technical report, programming development

- Analysis of the data and aggregation levels of relevant data calls
- The present data and functionalities in the RDB need to be compared with possible data calls
- Develop functionalities which automatically created potential data calls

7. Development of statistical sound raising in the RDB. (20% of total budget)

Outputs: Technical report, Technical meetings/workshops covering all regions

- Identify the consequences of implementing the new exchange format for the existing methods, processes and data flow
- Specifications of the database changes to accommodate the new exchange formats in the RDB.
- Specification of new tables and fields to store the new processed data raised with statistical methods.
- Specifications of incorporation of statistical methods in R into the RDB.
- Identify which additional processing functionalities are need to be developed in order to comply with statistical raising methods
- Prove of concept for inclusion of the methods in R in the RDB

8. Update of the existing roles and access module. (14 % of total budget)

Outputs: Technical report, programming development

- Specification, test, development and implementation of updated internal structures final test

11. Landing obligation

RCM NS&EA was faced with two tasks relating to the landing obligation:

- Address ToR 7;
- Respond to EU MAP questions directed to RCMs.

There were two initial responses to these tasks:

- There was a significant cross-over between the discussions required across the two tasks that could, perhaps, have been avoided if a more considered and coherent ToR had been established;
- Many of the issues raised for consideration by these tasks had already been commented on by earlier meetings of the NS&EA RCM and/or by STECF and its expert group on revision of the DCF. In these instances the RCM response simply reflects what has been previously stated.

Throughout its discussions, RCM NS&EA was conscious that the opportunity had been lost for the Scheveningen Group charged with oversight of the discard plans for the North Sea region and the RCM to work in a coordinated manner to address the data collection issues arising from the landing obligation. This is particularly to be regretted given previous STECF-endorsed report of its EWG 14-02:

“The need for end users to identify the data requirements that support their activities is central to the philosophy underlying revision of the DCF. As the collection of discard data for the purpose of resource evaluation and the collection of data to fulfil the criteria developed to monitor the discard plans are both intrinsically linked to the discard plans themselves, the underlying data needs should, rightly, be identified as a part of the process of developing those plans.”

In reality, the plans have been developed without any real regard to the data collection requirements; instead it appears that the RCMs are now being asked post hoc to describe the data collection requirements under the landing obligation. This is wholly unacceptable and, given the tortuous descriptions in the draft plan of how the landing obligation is to be phased in across different species, different fleets and different years, it is likely to diminish the quality of the scientific data that is collected; prejudice evaluations of the landing obligation, reduce the quality of stock assessments and advice. Notwithstanding this, RCM NS&EA reiterates the following general point:

STECF considers that there is a continued requirement for an “at-sea” scientific data collection programme that delivers representative unbiased data collection from commercial fishing trips for the following reasons:

- ☐ *Evidence exists to indicate that self-reporting of discards stipulated under the control regulation (EC regulation 1224/2009), does not provide accurate estimates of discards and only applies to TAC species.*
- ☐ *Scientific observers not only collect data on regulated species, but also on catches of unregulated and unwanted species.*

(STECF 14-07)

It is essential that observer programmes with a scientific purpose are kept separate from fisheries control and enforcement. The objective but also the main challenge for scientific observer programmes is to get independent and unbiased data. This will most likely not be possible if the observer’s role is extended to cover estimation and monitoring of quota uptake and compliance with the discard ban as suggested by EWG 13-18.

(EWG-14-02 as endorsed by STECF 14-07)

*As laid out in the EWG 13-02 meeting report, it is unlikely that the introduction of a landing obligation will require a change in the biological variables to be collected. However, it may have a large impact on the methods to be used in the collection of the data. There most likely will be a continued need for discard estimates in data for future resource assessments. **It is, however, not clear yet how these estimates will be obtained and what kind of data collection will underpin them, as the detailed implementation of the landing obligation will depend on regional discard plans** (e.g. Scheveningen Group, BALTFISH).*

(STECF 14-02 underlined for emphasis by the current meeting of NS&EA RCM).

The diagrammatic representation of differing catch components is given below and is used for reference to those catch components in the following text:

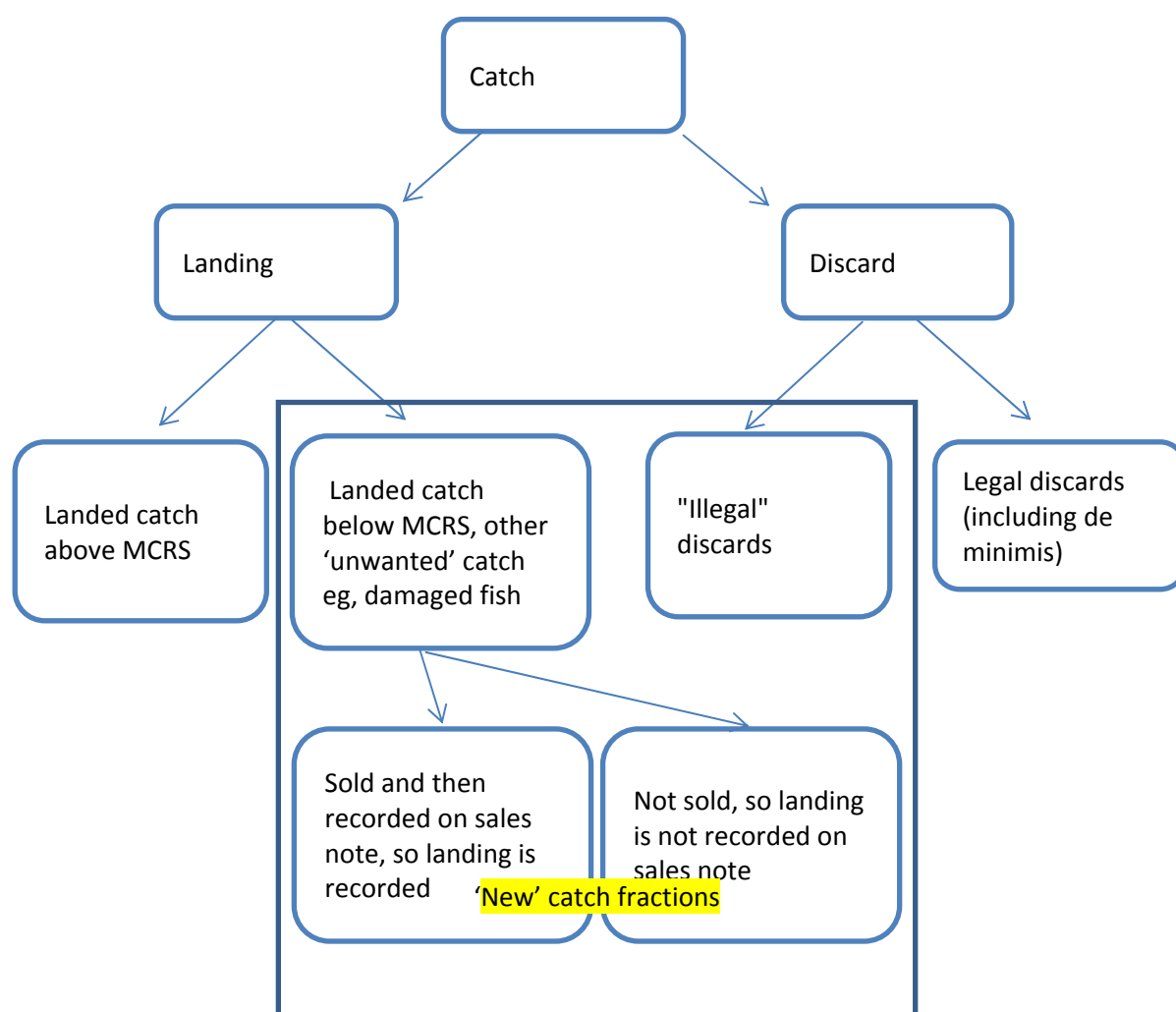


Figure 11.1 Impact of the introduction of the landing obligation, and/or preparations for its implementation

Currently it is not possible to clearly evaluate the impact of the landing obligation as it was only introduced in 2015 for pelagic and industrial fisheries in all EU waters, and in the Baltic Sea for salmon and cod fisheries. The RCM BALTIC will have responded to this ToR and RCM NS&EA can only draw on the experiences of institutes sampling the Baltic over the last six months and those sampling or gathering data on pelagic fisheries in the North Sea and Eastern Arctic.

Scientific data collection agencies generally have no input to or experience of monitoring for control data but these data are crucial to qualify the biological data that is collected. From the outset, the EU and ICES expert groups (RCMS, STECF, PGCCDBS, WGCATCH) have been very vocal with their concerns. These include the impact of the landing obligation on the quality of the control data (landings, unwanted landings, and discards), the role of observers and the access to vessels and landings to collect biological data.

The control data derived from logbooks comprises some of the principal input data for stock assessment. It is the population data for the science sampling programmes, the sum of the removals that feed into assessments and advice – assessment scientists are totally reliant on this data for describing and defining the populations and for managing regional sampling plans. As all stock assessment models are very dependent on time series it is very important the different components can be comparable between years. Assessment scientists cannot afford to underestimate the impact of fishing effort on recruits to a fishery. Blurring the distinction between the different components of the catch increases the uncertainties around any catch estimates derived from the sampling programmes and undermines any potential advice in reference to catch options or effort management from the assessments using these data.

The main perceived impacts, restricting the issues to data gathering, are addressed in turn below:

Impact on data quality

Identifying the catch fractions

Concerns as to whether the control agencies will be able to collect and record figures for the fraction of the catch that would have been discarded but brought ashore under the obligation, have been partly answered in the Baltic and North Sea pelagic fisheries. Officially, the unwanted landings have been classed as landings with a presentation BMS (below minimum size). The present suggestion from the draft implementing regulation from the expert control group is that this fraction will be recorded on the landing declaration at the end of a trip. This then assumes that the records on the logbooks will account for this component in the catch records for that species. It is not clear if national guidance to fishermen has been provided and this practice adopted. In Netherlands, Denmark, and Germany fishermen are reporting this component of the catch on the landing declaration, the control agencies are able to process and record them but there is no reference to how good these figures are. It is unclear as to what any of the figures represent – the catch figures in the logbooks, and the landings on the declaration both HUC (human consumption) and BMS and any recorded discards. It appears that some MS rely on the sales notes data to describe the landing declarations, and for these MS it will not be possible to capture any proportion of the BMS fraction that is not sold. It would be preferable for the BMS component to be recorded in the logbook with each catch record, especially, if multiple days, grounds, gears or gear configurations are fished.

Preliminary results suggest that in Denmark, unless these figures appear on sales notes, they do not appear in the official landings. Comparisons of official BMS landings in Denmark to date and observer data from the same areas and period in 2014 show the official BMS figure to be between 5 and 50% of the observer estimates.

Work is being carried out by EFCA enforcement vessels boarding fishing vessels in the Baltic and sampling the last haul of the day to collect comparative data. This is yet unpublished, however preliminary results indicate a substantially higher catch rate for the BMS component in this study compared to the official logbook estimates and even the observer estimates.

Since 2011 (under the control regulation 1224/2009) there has been a requirement for fishermen to record any discards >50Kg per species per record, this appears to only happen rarely and it is not enforced (examples of this were presented at RCM Baltic 2013). This may now be superseded under the landing obligation but the issues affecting why this regulation was not enforced then, have not gone away.

The data needs for compliance and the data requirements for science are different in terms of the resolution and its use. Data sufficient for control may not be sufficient for science and these differences need to be resolved. How this is resolved is dependent on the control agencies and the implementation, it is not in the hands of the science data collectors, but the needs of science require it to have greater influence over this that appears at present influence.

Impact on access to fishing vessels and landings

Although access to Danish vessels in the Baltic and Dutch pelagic vessels for observer trips does not appear to have been affected, observers in Sweden have had difficulties getting to sea in the Baltic. Their refusal rates so far for 2015 have been extraordinarily high since the implementation of the landing obligation.

Access to the pelagic BMS landings ashore has not been an issue for Danish and German port samplers and has been mixed for Scottish port samplers. Initial observations in Germany suggest that sampling for otoliths across all size groups caught within pelagic fisheries has been easier ashore than historically when these fractions were discarded at sea. In Scotland access has been reasonable but the sorting processes at the factories where the total catch ends up can confuse the interpretation of the different components and the fractions sampled have been comparatively small.

Access to BMS Cod landings ashore is nigh on impossible in Denmark. This component is disposed of before samplers get access to them. But in Sweden they do not appear to have any problem getting access to the cod landings but they do not know or have confidence in the reported weight of this component of the landings.

Impact on fishing behavior and the observer affect

There was a concern that a landing obligation could increase a perceived 'observer affect' where having an observer on board affects the fishing operation. This is however difficult to quantify, except to compare the refusal rates between years.

In the Dutch pelagic fisheries there appeared to be a change in fishing operations in anticipation of the discard ban. Discard rates decreased and these rates were maintained into its implementation for those trips observed.

Concerns as to how well the data collected by observers reflects what the rest of the fleet are doing needs to be better understood and, with the perceived incentive for fishermen to alter behavior when having an observer on board, there is need to develop a strategy for comparing the characteristics of landings from fishing trips with and without an observer presence.

Preparation for its implementation

The EU and control agencies in the countries so far affected by the landing obligation appear to have set up a process for nominally recording the BMS fraction but this could still be improved.

RCM NS&EA can only reiterate here that it is imperative that MS review their national catch and landings sampling protocols to ensure that all fractions of the catch (whether landed for human consumption, BMS, through exemption, illegal, discard) are categorised and sampled. The national databases need to be able to cope with these additional sampled categories and potentially cope with different landings components being sampled as part of a different sampling event (for example landings being sampled at a market and BMS being sampled at a fish processing factory on a different date). MS need to ensure their databases can record and easily define either multiple categories of discards or multiple categories of retained including the BMS landings.

To better review RCM NS&EA experiences in 2015, and inform on preparation for 2017 to 2019 the RDB needs to be able to hold data on the BMS fraction in the sample tables and the BMS fraction and any record discards in the CL tables. These fields will need to be accounted for in any data call.

The sampled fraction may need to be sub categorised to deal with issues detailed in the following sections.

11.1 Operation of at-sea observer programmes and role of scientific observers

The RCM NS&EA response to this ToR is contained in the introduction to this chapter and also in section 10.7.

11.2 Quality and integrity of catch data collected by the control agencies, i.e. logbook sales notes data

The landing obligation was introduced in 2015 for the pelagic industry and for cod and salmon in the Baltic. Data from 2015 in its present state has still not been fully evaluated for scientific purposes however, there appear to be areas where the data quality could be improved.

Presently there is only information on the total landings by species in the logbooks. This indicates that it is not possible to distinguish between the fraction landed below MRS and the fraction landed above in the logbook. It is highly relevant that this fraction is recorded in the logbook and not just on the landing declaration.

For some countries it appears to be problematic receiving information on the fraction below MRS if this fraction is not sold and therefore not on a sale note. A solution for recording the BMS fraction not sold is needed.

The preliminary results from the Baltic Sea indicate there is a discrepancy between the recorded data BMS in the landing declaration and the information from the observer trips. The observer trips in the Dutch pelagic fisheries showed a decrease in the discard rates a year prior to the discard ban which seems to be maintained into the implementation. Sales note data is used to verify landings data but there does not appear to be a process for validating the BMS fraction. The RCM NSEA is not aware of any MS that at present time have validated the control data on the BMS fraction.

Vessels under 10 meter are not presently required to fill in a logbook. For some countries information from this segment is only available from sales notes (where the BMS landings will not be apparent if it is not sold). Therefore there is a need for more detailed information from the under 10 meter vessels. Some countries have developed a monthly fishing journal (simplified logbook), where this information could be captured.

Haul by haul data in the logbook would increase the data quality. In the Baltic Sea haul by haul information in the logbook has been required and implemented for all MS since 2015. If the BMS fish was recorded on these logbooks this would allow more detailed information on where the main catches of BMS fish are taking place. Furthermore, haul by haul information can be used to link the logbook data with CCTV and with VMS data given a much higher resolution and quality in the data. It would also improve the potential to 'control' the logbook data if the skippers are obliged to fill in the information by haul. Haul by haul information would also improve any discard atlas

To avoid catching BMS fish many MS have been reviewing and developing more selective gears and implementing them in different regions (eg. veils in the brown shrimp fishery and selectivity grids in Nephrops fisheries). However, if it is not mandatory to report this information in the logbook it is very hard to define the fleets and compare the catch compositions between different fleets within a region. Therefore the RCM NSEA are recommending it to be mandatory to report any selective devices.

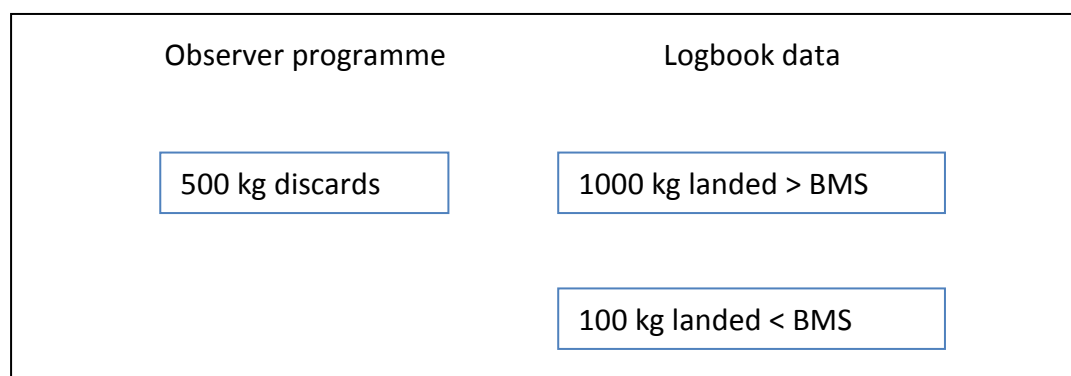
The following presents a list of information that RCM NS&EA considers important to be collected noting that it is not in the power of scientific data collectors to gather this information. The list is presented in descending order of priority:

1. BMS fraction in the logbook
2. Sales notes or equivalent for the none sold BMS fraction
3. Validation of the control data for the BMS fraction
4. Solutions to the recording of these data for the under 10 meter vessels presently only reporting catch on sale notes
5. Haul by haul information in the logbook
6. Selective gear information in the logbook

11.3 Generation of catch estimates derived from sampling programme data

The catch estimates from the commercial fisheries consist of the estimate of the landing and the discard component. Landing data from logbooks have in general been considered reliable from all MS until present. However, the former landing information will now be merged with information from the BMS fraction.

All MS need to take the new fraction (BMS) into account when raising the data. As an example, prior to the landing obligation the discard ratio could be calculated as: discard (estimated by observers on a trip) / total catch (landings from logbook + discard estimated by observers). Under the landing obligation, the landings from the logbook include the BMS fraction. Figure 11.2 shows how the discard ratio could be (wrongly) calculated. It very depends on how the MS is conducting the raising and the main message is therefore to pay attention to the new BMS fraction and make sure it has been accounted for in the calculation:



Discards / Total catch:

- CORRECT METHOD: 500 kg (discards) / 1500 kg (total catch) = 0.33
- WRONG METHOD: 500 kg (discards) / 1600 kg (total catch) = 0.31

Discards / Total landings:

- CORRECT METHOD: 500 kg (discards) / 1000 kg (total landings) = 0.5
- WRONG METHOD: 500 kg (discards) / 1100 kg (total landings) = 0.45

Figure 11.2: Example of data available for an observer trip from two sources (i.e. observer programme and logbook data) under the assumption that the observer is aware of the BMS fraction and the vessel is not landing all discards.

Quality control to be conducted in the observer program

RCM NS&EA recommends the member states to conduct quality control on the observer programs. More information on how to conduct quality control can be found in SGPIIDS 3. The MS could conduct analysis on the categories of size sorting composition of fish in the landings from the sampled vessels, before the vessel was sampled, from the sampled trip and after the vessel was sampled. Analysis of VMS tracks and spatial pattern in fishing may provide additional information on whether or not the vessel changed its spatial fishing behavior due to an onboard observer. In addition, the size distribution on the landed components (including the BMS) could be compared with the total size distribution recorded at the observer trips. This could indicate if only a fraction of the catch has been landed.

11.4 Experiences of on-shore sampling of landed discards

The landing obligation was introduced the 1st January 2015 for pelagic species in the North Sea area. The landing obligation will during the fourth coming years (2016-2019) gradually be introduced for all species subject to catch limitations in line with the discard plan developed by the Scheveningen group. This means that fish below the Minimum Conservation Reference Size have to be landed and cannot be used for human consumption.

An effective implementation of this new management regime may imply that former discards (BMS) for species covered by the landing obligation may be sampled ashore instead of during sea sampling programs. Before this potential change can be implemented experiences need be gained on the extent is the BMS fraction of the catch actually landed?

- Can we get reliable estimates on volumes of caught BMS fish from onshore-sampling programmes?
- Can we get reliable information on age and length distribution from our samples if some of the BMS fish still are discarded?
- How do we get access to sample BMS fish (is it sold at the same markets as other landings, is it landed in boxes....)
- Are sufficient information captured in logbooks, landing declarations and sales slips to allow us to raise sample data to the population level for this fraction of the catch?

As the landing obligation only have been in force for a very limited time are experience of shore sampling of former discards (BMS fish) limited. The main experience (anecdotal), so far, from the North Sea region is landings of catches that formerly should have been discarded from the pelagic fishery. The main reason for formerly discarding this fish is both related to size (under MCRS) and quality (damaged fish). This new type of landings is however, so far, not included in the onshore sampling program.

The RCM-NS&EA was informed on experiences from the Baltic cod fishery where the landing obligation also came into force 2015. Preliminary observations from the Baltic indicate that data on the landed volumes of unwanted cod (<35 cm) obtained during at sea observers trips and BMS fish landed in harbors differs significantly, in some cases by orders of magnitude. Some MS have initiated shore sampling of the BMS fish primarily to get an understanding on how this fish can be accessed.

A major challenge in the Baltic is that there, in most MS, presently seem to be no straight forward way to get information on the amount fish below minimum reference size that are landed from the official catch statistics (if the fish is not sold it will not appear in the sales slips, it is not always a distinction between fish above and below MCRS in the logbook). This might cause problems when sampled data is combined with official data prior to stock assessment.

The landing will, in the North Sea region, be implemented for a limited number of demersal species*fisheries combinations during 2016. Full implementation for most TAC species will take place 2019. From a data collection point of view this means that three fractions of the catch (landings, BMS and discards) need to be sampled instead of the present two. The complicated structure for phasing in of the landing obligation will, in particular in lack of proper control and documentation, create a real challenge for collection of data (onshore and at sea) as well as in the preparation of data for stock assessment.

It is important to build on the experience of the different member states as well as getting early warning signals if the quality of the catch data (landings, BMS, discards) deteriorates substantially.

ACTION: All MS involved in the catch sampling of fisheries/stocks subject to landing obligation should provide RCM NS&EA 2016 with short working papers, based on the experience from the sampling activities in quarter 1 and 2. The MS should assess the following aspects:

- If and how the MS has adapted the sampling program to the new management regime
- Are there changes in the access to fish to sample catches (rejection rates in sea sampling programmes, access to BMS fish onshore)?
- Are there any indications on changes in the quality of the catch data?
- Have fishermen changed their fishing behaviour? If yes, what has changed and how can we adjust and account for these changes in our sampling?

11.5 Progress on the 2014 recommendations on data collection in a landing obligation management regime

RCM NS&EA put forward 3 recommendations during their 2014 meeting related to the landing obligation (see ToR 1). Two of the recommendations were addressed to the Commission and national control authorities to consider needs, in relation to the landing obligation, for changes in data capture for data collected under the control regulation. The main items to consider are robust recording of BMS fish in the official statistics and better information on gears used in the fishery. If these changes are not adequately recorded in the official catch monitoring data then the ability to make inference from scientific samples to fishing fleets will be limited. The better the accuracy and integrity of the monitored catch data the better are the estimates of the total catch, a

central element in fish stock assessment. The responses to the recommendations are however so far limited and highlight the urgent need for better communication between control authorities and regional data collection groups.

RCM NS&EA also highlight the need for national and international IT-systems and estimation procedures to be adapted to properly deal with the new BMS fraction of the catch. The issue is urgent and need to be solved prior to data calls for 2015 data as the landing obligation already is in force for some stocks and in some areas.

11.6 EU MAP questions directed to RCMs

The Commission has asked the RCM NS&EA to consider the impact of the implementation of the landing obligation on the DCF data collection programmes. This issue has been dealt with at numerous ICES, STECF and RCM meetings and their response can be found in reports RCM NS&EA 2014, RCM NS&EA 2013, RCM Baltic 2013, RCM Baltic 2014, RCM North Atlantic 2014, LM 2013, LM 2014, STECF 12-02, STECF 12-07, STECF 13-01, STECF 13-06, STECF 13-12, STECF 13-23, STECF 14-01, STECF 14-02, STECF 14-06, STECF 14-07.

The Commission is assuming that *“under the Landing Obligation, discard data will become available for TAC species and species subject to minimum sizes (Annex III of the Mediterranean Regulation). Therefore, with the gradual phasing-in of the landing obligation, discard data may become less important. Assuming high levels of compliance with the landing obligation, the use of observers on board could then be replaced by harbour sampling for species subject to the landing obligation. Still, gaps in data may arise from the de minimis exemptions. So, there is a need to define fisheries, metiers and species falling under the de minimis exemption”*.

The RCM NS&EA has been asked to address the following questions:

(i) *Under the discard ban, will there be a need to collect discard data?*

Firstly, the landing obligation only applies to TAC species. Therefore, information on discards of non TAC species will not be available without running observer programmes and full concurrent discard data is required to answer the requirements of the DCF to provide data for ecosystem impact and MSFD assessments. Secondly, experiences in the Baltic region have shown that, since the landing obligation was implemented 1st January 2015 for cod, salmon and pelagic species, recorded catches of cod below the minimum reference size (BMS), which should be landed, are not reflected in the observed catches of BMS cod. If reliable estimates of catches are to be used when carrying out stock assessment the only solution is to continue the observer programmes, as recommended by the RCM NS&EA 2014 and endorsed by the LM 2014.

(ii) *Which are the fisheries, metiers and species falling under the de minimis exemption for which observers are still needed?*

The discard plan for demersal fisheries in the North Sea, the Skagerrak and the Kattegat is not yet published. Therefore, the RCM NS&EA are not in the position to comment on or answer this question. With the present setup for controlling the compliance of the landing obligation there will probably be no fisheries or species where observers programmes can be discontinued.

(iii) *Is this depending on the definition of de minimis exemption: per trip, per fishery, per area, per Member State?*

The definition of de minimis exemption: per trip, per fishery, per area, per Member State has no impact on whether observer programmes should be continued or discontinued. As explained above, with the present setup for controlling the compliance of the landing obligation, observers programmes need to be continued in order to get reliable catch estimates to be used for assessing stock status and providing advice for the management of the stocks, ecosystem impact and MSFD indicators.

(iv) *Is on-board sampling necessary/useful/feasible for TAC species or species subject to minimum sizes (Annex III of the Mediterranean Regulation) and if not, when should it be abandoned/replaced by other type of sampling?*

As mentioned above the observer programme will be needed as not all species will be subject to landing obligation and present setup for controlling the compliance of the landing obligation currently appears to be inadequate for ensuring reliable catch estimates.

(v) *Is the data on discards recorded under the Control Regulation biased?*

According to the Control Regulation since 2011 it has been mandatory for fishing masters to report all discard more than 50 kg per species per trip in the logbook. Analysis of records of discards in several MS logbook have shown that discard reporting is biased. These issues are valid for all MS fishing in the North Sea, the Skagerrak, the Kattegat and the eastern Arctic area. This provides clear evidence that discard records are biased. Information for 2015 from the Baltic region indicates that this is still an issues even though the landing obligation has been implemented for that region.

(vi) *Can this bias be quantified by observer trips?*

The DCF observer programme is based on a statistical sound sampling approach where the aim is to quantify the total outtake of a stock in volume and finally in catch at age. The sampling scheme is not designed quantify bias of the catches by species recorded in the logbooks. Such a quantification needs a complete different sampling programme.

(vii) *If under the landing obligation if observers would no longer be on board, can all other data still be reliably collected: non quota species, concurrent sampling, incidental bycatch, do we not miss essential points that are perhaps not specified such as the behaviour of fishermen, do we not get out of touch with the sector?*

Without observers onboard it will not be possible to collect information on the diverse nature of non-quota species if they are discarded at sea. Incidental bycatches of marine mammals and seabirds can be estimated by the use of cameras. Assessing changes on behaviour of fishermen requires multiple analysis and information from multiple sources such as detailed information on each fishing event, catch composition – all species, landing pattern by species and detailed information of gear used.

References:

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STECF 13-01: STECF 13-01 Review of Proposed DCF 2014-2020 – Part 2 (EWG 12-15).

STECF 13-06: STECF 13-06 Review of DC MAP- Part 1 (EWG 13-02).

STECF 13-12: STECF 13-12 Review of DC MAP- Part 2 (EWG 13-05).

STECF 13-23: STECF 13-23 Landing obligation in EU fisheries (EWG 13-16).

STECF 14-01: STECF 14-01 Landing Obligation in EU Fisheries - part II (EWG 13-17).

STECF 14-02: STECF 14-02: Revision of DCF (EWG 13-18).

STECF 14-06: STECF 14-06: Landing Obligations in EU Fisheries - part 3 (EWG 14-01).

STECF 14-07: STECF 14-07 DCF revision – Part 4 (EWG 14-02).

11.7 Landing obligation recommendation and agreement

Implications of the landing obligation - Scientific data storage, IT systems and estimation	
<i>RCM NS&EA and RCM NA 2015 Recommendation</i>	<p>RCM NS&EA repeats the recommendation from last year that scientific institutions and ICES need to ensure that data recording systems, IT systems and estimation routines are able to appropriately deal with the new BMS (fish landed below MCRS) fraction of the catch that originates from the landing obligation. National and international databases (including InterCatch and FishFrame) need to accommodate this new fraction in order to make catch estimates transparent.</p> <p>Authorities should adjust logbooks and IT systems to accommodate the accurate recordings of all catch components, including BMS and fish that are discarded, for example under the de minimis exemptions.</p>
Justification	<p>The landing obligation will introduce a new category of landed fish below minimum conservation reference size (BMS) and this fraction of the catch will require to be estimated. This necessitates that within national institutions and ICES all stages of the recording, storage and estimation processes are able to accommodate this fraction.</p> <p>Many national IT systems may have data models based on a distinction between landed and discarded data that will require modification to accommodate the BMS fraction. Routines to estimate national catch compositions for length and age for assessed stocks will need to be adjusted. The ICES InterCatch system and the regional data base may be similarly affected.</p>
Follow-up actions needed	Scientific institutions and ICES data centre to consider if present systems are appropriate and if not make the required modifications.
Responsible persons for follow-up actions	<p>Scientific institutions within MS & ICES</p> <p>National and EU authorities</p>
Time frame (Deadline)	<p>As soon as possible as the landing obligation already is in place in some areas and for some species.</p> <p>For InterCatch/RDB prior to data calls for 2015 data.</p>

12. National Administrations

Terms of reference 8 “National administrations” was dealt with in a subgroup comprised National Correspondents (or representatives thereof) of a number of Member States participating in the RCM (DE, DK, ES, NL, SE, LT, UK).

12.1 Issues relating specifically to national administrations and the role of NC within the RCM/RCG context

DG MARE had specifically highlighted the need for NC engagement at regional coordination meetings in a letter sent in December 2014 (Ares (2014) 4170225). However, their involvement was not suggested in the DCF proposal which highlighted only the responsibility for NCs to ensure that such meetings were attended. The group considered that the RCM provided a useful opportunity to discuss cross MS issues and pointed towards a need towards more regular communication and a possible extension of the scope of the National Correspondent meetings. Excepting the meeting in March 2015, these had traditionally been used as a vehicle for the Commission to disseminate information rather than for debate or sharing common experiences.

The constraint imposed by the limited EMFF funding pot was recognised. For a number of Member States this made their funding position worse than under the previous system of direct management by the Commission and in all cases had imposed an unwelcome additional administrative burden. The impacts of a number of changes in scope of data collection under the new DCF were unknown and it was possible that some Member States might find themselves in the position of having insufficient resources to meet their obligations.

A concern was raised that there was a general lack of mid-sized research vessels and administrations could cooperate more closely on a regional level in order to avoid any shortfalls in survey coverage. This could be achieved by exploring chartering options or by cost-sharing and staff exchange as currently done for two ICES-coordinated surveys (see ToR 8e).

It was noted that few National Correspondents would have an automatic mandate to commit resources to shared programmes and consultation within their and other administrations was invariably necessary. It was agreed that decision making needed to be streamlined to ensure that funding decisions impacting on the National Workplans (WPs) of other Member States be taken by 1 September at the latest. This was in line with the calendar of submission of amended WPs to the Commission by the end of October each year.

12.2 Harmonisation of control agency data collection, and the cross border sharing of control agency data, for vessels operating and landing outside their flag country

Problems with sharing of control agency data (activity data) between Member States was not considered to be an issue that needed to be addressed by the RCM. Articles 14 and 62 the Control Regulation² ensure that flag Member States will be in receipt of sales note and logbook data. It was acknowledged that delays in Member State authorities receiving this information and data quality could cause issues but these were within the remit of control agencies in individual countries to address.

RCM NSEA highlighted the need for greater coordination within EC institutions responsible for data collection (control, statistics and DCF) to ensure that transversal data collected met end user needs. Two distinct issues were identified – the content of reference lists maintained on the DG MARE’s Master Data Register (MDR) and range of compulsory variables collected through logbooks and landing declarations.

As regards the MDR, it was noted that there had been some significant changes to code lists for gears and port codes in the previous year which had a direct impact on DCF data. The port code issue was being addressed separately through a sub Group of the Control Experts Working Party where the intention was to move away to a variation of the UNLOCODE list which would be maintained jointly by Member States and DG MARE.

12.3 Harmonisation of catch data recording e.g. metiers

There is a discrepancy between the information registered in the fishing vessel log books and the information needed to be reported under the current Data Collection Framework regarding metiers, i.e. Member States may end up in a situation where they do not have all information needed to report on a metier level. Part of the solution may be that some variables in the log book that are currently optional to fill in should instead be mandatory.

The problems relate specifically to information on selection devices, and further, there are problems to report sufficient data for small scale fleets (fishing vessels below eight or ten meters which carry coastal journals), for which effort estimates can be poor. A

² COUNCIL REGULATION (EC) No 1224/2009 of 20 November 2009 establishing a Community control system for ensuring compliance with the rules of the common fisheries policy

more detailed review on harmonisation of catch data recordings in different Member States can be found in the report *Scientific, Technical and Economic Committee for Fisheries (STECF) – Evaluation of Fisheries Dependent Information (STECF-15-12)*, 2015.

12.4 The position of national administrations on populating the Regional Data Base according to the RCM data call with i) Landings and effort data and ii) Sampling data

The RCM stressed the importance of having detailed data available in the Regional Database. Whilst a few countries (in at least one case through disclosure concerns) had been late to populate the RDB, this had improved considerably. A majority of Member States had formally expressed support for the RDB Policy Document that had been circulated by ICES. This had also received a positive review by Commission legal services. It was considered desirable if not essential for all Member States to upload their data directly to the RDB as this was more efficient allowed data quality issues to be identified and addressed early. It was suggested that all Member States should provide a formal undertaking to do this in future possibly through their National Plans.

12.5 Task sharing and task trading mechanisms within the context of a regional sampling designs.

[The RCM undertook general overview of the task sharing and trading between Member States for at sea surveys and harbour sampling that would be needed under a regional sampling programme. National Correspondents present confirmed their general support and willingness for their administrations to participate in task sharing and compensation mechanisms.

For at sea surveys, participation was provided for under the DCF proposal for those member states exploiting greater than a given percentage of the exploitation of a stock. Participation could be in a number of ways: operation of the research vessel; contribution of staff and financial support. It was suggested that EU TAC share rather than level of stock exploitation might provide a better or at least simpler basis for determining the degree of involvement. A cost sharing model requiring contributions from Member States with greater than 5% share of the relevant EU TAC had been agreed at RCMs in 2014 for to the two international surveys (International Blue Whiting Spawning Survey and International Ecosystem Survey in the Nordic Seas) and it was suggested that this model could be carried through to other surveys.

Regional programmes were expected to be able to deliver benefits in ensuring continuity in sampling effort through identifying where resources might be deployed to cover short term problems such as mechanical failures. Benefits were also expected through sharing the skills and experience of staff from many countries. Problems were foreseen where one or more countries chose not to partake in the programme and particularly where the country(ies) concerned had a significant share of the stock. Member States not participating in the Regional Programme would be expected to unilaterally meet their data collection obligation, which might be expected to require more input than would otherwise be the case. It was noted that the issue of Member States' obligations was addressed in some detail at the RCM NSEA in 2014 (see Annex 4). This looked at how data collection responsibilities could be delegated to RCGs and how obligations arising from these groups could be made legally binding. The RCM agreed that this remained a sensible approach where a joint programme was agreed by a majority of MSs but there was some doubt as to how far the Commission would wish to be involved in compelling involvement by reluctant Member States.

For harbour sampling, contributions to sampling of landings into another Member State were covered under the requirement to sample landings of greater than 200 tonnes and were usually addressed through bi-lateral agreements. In determining task sharing/compensation, it was agreed that both TAC share and where the catch was landed needed to be taken into account.

RCM considered that it was likely that the introduction of regional sampling, whilst leading to efficiencies overall and a fairer distribution of the resource burden, could lead to cases where a Member State's contribution would need to increase. It was noted that the survey list in the current DCF, which in part dictated the available EMFF funds, related to activity from 2001. It was therefore suggested that an assessment be made of the current financial burden of individual countries for sampling (as identified in 2013 financial statements submitted to the Commission) compared to see how far these were in proportion with what might be expected given relative TAC shares or stock exploitation. The issue of contributions to sampling of mixed species fisheries was briefly considered. The possibility of using 'cod equivalent' units was suggested as one possible approach.

It was concluded that outcomes on task sharing and compensation would necessarily hinge on the outcomes of the 'FishPi' project looking at regional sampling case studies.

It was highlighted that DG MARE should have a strong interest in the outcomes of the work as this would be extremely important in demonstrating how regional cooperation should work in practice.

13. Metiers

Metiers were discussed in accordance with ToR 9: “Discuss the role of metiers in sampling and estimation, as descriptors of fishing, as domains for estimation and their merging in the InterCatch, the RDB and the STECF data base and as an aide to sampling. Define how they are to be used in the future, the extent to which national and regional lists need to be harmonised and how lists are to be stored for use in a regional context”.

Metiers have been introduced in the DCF to progress towards a common understanding and spelling of fishing activities. The objective was to be as consistent as possible in the description, be fully comprehensive and compliant to the regulation as they were written at that time. As from the start, the metiers were meant to help discriminating any variables of interest (transversal variables, length structure, age structure, discarding ogives, ...) and serving the needs of any end-users, although these were not clearly specified.

In the DCF, it was specified that the sampling design should be made by metiers. There were provisions for merging but these mergers were marginally used. Eventually, many countries suffered to cover the high number of strata derived from the metiers definitions. In 2010, WKMERGE (ICES 2010) came up recommending that merging of metiers should be treated as a concept more applicable to a-priori defining domains of interest e.g. metiers that are stable in time, and that strata should be defined so that there is controlled sample selection probability. In other words, metiers should not be used for sampling design, and the DCF accommodated to this by including a new tab ‘Sampling frame’ in the set of tables used to describe the National Programmes. In the same time, ICES WKPICS 2 and 3 (2013, 2014) developed further by defining more precisely how to design a statistically sound sampling design.

Metier continues to be a common descriptor of the fishing activity, capturing information on the gear, the species composition, the mesh size range and the use of a selective device. Different use are made of the metier information (populating the end-user databases with commonly agreed references, enable stock assessors to impute unsampled strata, being precise in informing on discarding behaviours and enabling clustering fishing activities for length or age structure based on empirical information, use as entries into new models such as mixed fisheries analysis, ...).

In the future, there should be work on reducing the number of metier tags to be used regionally, since the distribution of volume of catches per metier is highly skewed, with a few metier tags capturing most of the total catches. This means that work has to be done, either to split generic tag like ‘OTB_DEF_....’ to capture specific activities (targeting flatfish, gadoids, ...) and merge in some ways the bulk of metiers tags capturing small amounts of catches. This work should be carried out by region. Eventually, a common procedure should be set up to create the metier field together with an agreed reference list by region. These should be then maintained within the RCGs.

14. Future multi-annual programme for data collection

14.1 List of research surveys to be carried out in the region in 2016

Surveys to be carried out as indicated in national programmes

14.2 Recreational fisheries necessary for the ICES advice

RCMNSEA reviewed the advice provided by ICES on what data may be required from recreational fishing, at what resolution and how it might be used. RCMNSEA agreed with the overall approach to consider the requirements on a case by case basis with a thorough review of data available and the potential impact of these data before committing to expensive surveys. The cost of these surveys was raised as a concern so the cost benefits need to be properly considered in each case.

Recreational data has been included in seabass and Western Baltic cod assessments but RCMNSEA were uncertain whether that had improved or impacted on the results.

Another concern related to the spatial resolution of these data. Proper consideration should be given to how these data may be included if they are exploiting different parts of the population. They may only cover a small area of the commercial fisheries or may cover a wider area when well-structured advice can be required at a smaller scale.

The RCMNSEA concluded that they had no issues with the advice but felt it was worth highlighting that the uncertainties in the commercial catch data as a consequence of the discard ban could have a greater impact on any assessment than the inclusion of recreational data.

14.3 Comment on list of proposed stocks& biological variables to be included in EU MAP

This issue was discussed in plenary when time was limited and NS & EA comments on the proposed lists of stocks were not conclusive. The views expressed included the comment that the list of stocks was particularly extensive, that there was no need for a list to be included in the regulation because samples of particular stocks could not be guaranteed to be collected, to the view that it was necessary for some form of list to be included, in part to tie national administrations into a commitment to sample important stocks.

15. Any other business

15.1 Discussion on age determination for stocks where age is not used in assessments

The RCM discussed if age determinations should continue in cases where age is not used in the assessment due to poor agreement between readers. Everybody agreed that the collection process needs to continue but had different views on continuation of the actual age determinations. The RCM is most likely not the right forum to give proper guidance in these cases as end-user involvement most likely is needed. Nevertheless MS need some guidance on how to deal with the situation and recommend that this is discussed at the LM where end-users are present.

Age determination in stocks where age is not used in assessments		
RCM NS&EA Recommendation	2015	RCM NS&EA recommends that the Liaison Meeting (LM) discusses and suggest a decision making process on how to deal with requirements on age determination for stocks where age is not used in the assessment due to poor agreement between age readers.
Justification	Many Member States undertake the task of determining the age of fish stocks e.g. anglerfish (<i>Lophius sp</i>) for which the age determination is not used in the assessment due to poor agreement between readers. In the present situation all MS make, in lack of guidance, their own judgement if age determination should be kept or not. There needs to be some kind of guidance to MS on how to act in those situations and the responsible body to give this guidance needs to be identified. The collection of material (e.g. otoliths) should continue as long as it is a requirement in DCF.	
Follow-up actions needed	LM members to discuss and reach an agreement.	
Responsible persons for follow-up actions	Liaison meeting 2015	
Time frame (Deadline)	2015	

15.2 Meeting 2016

The 2016 meeting will be held in the UK. Timing of the meeting will be decided at a later stage and may be dependent on the progress with future DC-MAP. In order to facilitate the common memory of the group, the following table provides an overview of the venues and chairmanship of this RCM.

Year	Venue	Chair
2015	The Hague, The Netherlands	Alastair Pout, UK- Scotland and Katja Ringdahl, Sweden
2014	Lysekil, Sweden	Frans van Beek, The Netherlands
2013	Vigo, Spain	Frans van Beek, The Netherlands
2012	Ostend, Belgium	Els Torreele, Belgium
2011	Hamburg, Germany	Els Torreele, Belgium
2010	Charlottenlund, Denmark	Sieto Verver, The Netherlands
2009	Boulogne-sur-Mer, France	Sieto Verver, The Netherlands
2008	Aberdeen, UK-Scotland	Christoph Stransky, Germany
2007	Uddevalla, Sweden	Christoph Stransky, Germany
2006	The Hague, The Netherlands	Jørgen Dalskov, Denmark

2005	Bergen, Norway	Guus Eltink, The Netherlands
2004	Oostend, Belgium	Richard Millner, UK-England

16. Glossary

AER	Annual Economic Report
AR	Annual Report (of activities carried out by MS under the DCF)
ACOM	Advisory Committee of ICES
ASC	Annual Science Committee
AWP	Annual Work Plan
CE	data exchange format for commercial effort data
CFP	Common Fisheries Policy
CL	data exchange format for commercial landings data
COST	toolbox for quality evaluation of fisheries data
CR	Council Resolution
CRR	ICES Cooperative Research Report
CS	data exchange format for commercial sampling data; calcified structures
CV	Coefficient of Variation
DCF	Data Collection Framework (follow up of DCR)
DC-MAP	Multi Annual Programme for Data Collection (follow up of DCF)
DCR	Data Collection Regulation
EAFM	Ecosystem Approach to Fisheries Management
EC	European Commission
EMFF	European Maritime and Fisheries Fund
EU	European Union
EUROSTAT	Directorate-General of the EC which provides statistical information to the EU
EWG	STECF Expert Working Group
FAO	Food and Agriculture Organisation of the United Nations
FishFrame	RDB software
GFCM	General fisheries Commission for the Mediterranean
IBTSWG	International Bottom Trawl Survey Working Group
ICCAT	International Commission for the Conservation of Atlantic Tunas
ICES	International Council for the Exploration of the Sea
InterCatch	ICES Database
JDP	Joint Deployment Plan
LM	Liaison Meeting
MFAQ	Most Frequently Asked Questions
MoU	Memorandum of Understanding
MRR	Master Reference Register
MS	Member State
MSFD	Marine Strategy framework Directive
NA	North Atlantic

NAFO	Northwest Atlantic Fisheries Organization
NE	North East
NEAFC	North East Atlantic Fisheries Commission
NP	National Programme (of activities carried out by MS under the DCF)
NS & EA	North Sea and East Arctic
PG	see PGCCDBS
PGCCDBS	Planning Group on Commercial Catches, Discards and Biological Sampling
PGECON	Planning Group on Economic Issues
PGMED	Mediterranean Planning Group for Methodological Development
PSU	primary sampling units
QA	Quality Assurance
QC	Quality Control
RCG	Regional Coordination Group
RCM	Regional Coordination Meeting
RDB	Regional Data Base (of the RCM)
RFMO	Regional Fisheries Management Organisation
SCIP	Specific Control and Inspection Programme
SC-RDB	Steering Committee Regional Data Base
SG	Study Group
SGABC	Study Group on Ageing Issues in Baltic Cod
SGMAB	Study Group on Multispecies Assessment in the Baltic
SGPIDS	Study Group on Practical Implementation of Discard Sampling Plans
STECF	Scientific, Technical and Economic Committee for Fisheries
TAC	Total Allowable Catch
VMS	Vessel Monitoring System, satellite based system to locate vessels
WG	working group
WGBFAS	Working Group on Baltic Fisheries Assessment
WGBIFS	Baltic International Fish Survey Working Group (ICES
WGBIOP	Proposal for new ICES Working group
WGCATCH	Proposal for new ICES Working group on commercial catches
WGNEW	Working Group on new MoU species
WGNSSK	Working Group on the Assessment of Demersal Stocks in the North Sea and Skagerrak
WGRFS	Working Group on Recreational Fisheries Surveys
WGRS	Working Group on Redfish Surveys
WKACCU	Workshop on Methods to Evaluate and Estimate the Accuracy of Fisheries Data used for Assessment
WKACM-2	Second Workshop on Age Reading of Red Mullet and Striped Red Mullet
WKADS-2	Workshop on age Determination of Atlantic salmon
WKAMDEEP	Workshop on Age Estimation Methods of Deep Water Species
WKARBLUE	Workshop on the Age Reading of Blue whiting

WKARHOM	Workshop on Age Reading of Horse Mackerel, Mediterranean Horse Mackerel and Blue Jack Mackerel
WKAVSG	Workshop on age validation studies of Gadoids
WKBALFLAT	BENCHMARK WORKSHOP
WKBUT	BENCHMARK WORKSHOP
WKCELT	BENCHMARK WORKSHOP
WKDEEP	BENCHMARK WORKSHOP
WKEID	Workshop on Ecosystem Indicators of Discarding
WKESDCF	Workshop on eel and salmon DCF data
WKHAD	Benchmark Workshop on Haddock stocks
WKMATCH 2012-	Workshop for maturity staging chairs
WKMERGE	Workshop on methods for merging métiers for fishery based sampling
WKMIAS	Workshop on Micro increment daily growth in European Anchovy and Sardine
WKMSEL	Workshop on Sexual Maturity Staging of Elasmobranchs
WKMSGAD	Workshop on sexual maturity staging of cod, whiting, haddock, saithe and hake
WKMSTB	Workshop on the Sexual Maturity Staging of Turbot and Brill.
WKNARC	Workshop of National Age Readings Coordinators
WKPELA	BENCHMARK WORKSHOP
WKPICS	Workshop on practical implementation of statistical sound catch sampling programmes
WKPRECISE	Workshop on methods to evaluate and estimate the precision of fisheries data used for assessment
WKSOUTH	BENCHMARK WORKSHOP
WKSPRAT	BENCHMARK WORKSHOP
WoRMS	World Register of Marine Species
WSSD	World Summit on Sustainable Development in Johannesburg
WP	Work Package

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- STECF-13-23 Landing obligation in EU fisheries (EWG 13-16) [EUR 26330 EN](#), JRC 86112, 115 pp
- STECF 14-01 Landing Obligation in EU Fisheries - part II (EWG 13-17) [EUR 26551 EN](#), JRC 88869, 67 pp
- STECF 14-02 Revision of DCF (EWG 13-18) [EUR 26573 EN](#), JRC89196, 103 pp
- STECF 14-06 Landing Obligations in EU Fisheries - part 3 (EWG 14-01) [EUR 26610 EN](#), JRC 89785, 56 pp.

STECF 14-07 DCF revision – Part 4 (EWG 14-02) EUR 26612 EN, JRC 89788, 77 pp.

Annex 1: Summary of recommendations

Upload in the RDB	
RCM NS&EA 2015 Recommendation	RCM NSEA urges all countries to upload their data in time for the RCM. RCM NS&EA also recommends EU to allow the appointment of some experts to prepare tables and figures for some days in advance of the RCM meeting
justification	Data fiddling within the RCM, has led to such delays in the analysis that no time was left for coordination. Only upload of the full datasets in time and preparation of summary tables by a group of experts in advance of RCM meeting can promote an effective coordinating meeting.
Follow-up actions needed	All MS to upload their datasets in time A small group of experts (2-3 persons) to be named to prepare tables and figures summarising the information contained in the RDB in advance of the RCM meeting.
Responsible persons for follow-up actions	All MS EU and RCM NS&EA
Time frame (Deadline)	Mid-2016 to be used by RCM NS&EA in 2016.

Use of the RDB	
RCM NS&EA 2015 Recommendation	RCM NSEA recommends that once the code list is finalized, all countries should repopulate the whole time series of landings, effort and samples to the RDB
justification	A multitude of codes for e.g. harbours, métiers, have been used and accepted to the RDB, leading to heterogeneities between countries and/or between years. Agreed code list for all fields of the RDB (see recommendation in ToR g), will enable the development of regional procedures for validation, statistical inferences and reporting.
Follow-up actions needed	RCM NS&EA to agree on code lists for all fields of the RDB All MS to implement the agreed code lists in their national data center for exporting purposes and upload their data in the RDB.
Responsible persons for follow-up actions	RCM NS&EA All MS
Time frame (Deadline)	Mid-2016 to be used by RCM NS&EA in 2016.

Landings abroad and the RDB	
RCM NS&EA 2015 Recommendation	RCM NSEA recommends that present situation in the sampling and estimation of landings abroad is reviewed and that the ICES data centre ensures that the RDB can hold accurate data that on the landings abroad fraction of the catch.
justification	Landings abroad constitute a substantial fraction of the landed catch, a fraction which needs to be sampled adequately and for which estimates are required. The number of records within the RDB would suggest either that foreign landings cannot be uploaded and stored adequately, or that there is very little sampling of foreign vessels occurring.
Follow-up actions needed	ICES data centre to ensure that sampling data derived from landings abroad can be uploaded, and that this data can be stored correctly within the RDB. WGCATCH to review the present situation in the sampling of foreign vessels, and the methodology employed to estimate landings abroad.
Responsible persons for follow-up actions	ICES data centre, WGCATCH
Time frame (Deadline)	To report back to the RCM in 2016.

Taking into account upload logs	
RCM NS&EA 2015 Recommendation	RCM NSEA recommends that the upload logs messages from the 2015 upload exercise be taken into account when agreeing on regional reference lists for the RDB
justification	There are a variety of errors reported by the upload logs that need to be sorted, like the different length codes used, the need to define codes of procedure for e.g. KW days and how to deal with missing or incomplete information.
Follow-up actions needed	Reference list group and WKRDB.
Responsible persons for follow-up actions	RDB-SC and RCM NS&EA
Time frame (Deadline)	Mid-2016 for the upload for RCM 2016.

Implications of the landing obligation - Scientific data storage, IT systems and estimation	
RCM NS&EA Recommendation	<p>RCM NS&EA repeats the recommendation from last year that scientific institutions and ICES need to ensure that data recording systems, IT systems and estimation routines are able to appropriately deal with the new BMS (fish landed below MCRS) fraction of the catch that origins from the landing obligation. National and international databases (including InterCatch and FishFrame) need to accommodate this new fraction in order to make catch estimates transparent.</p> <p>Authorities should adjust logbooks and IT systems to accommodate the accurate recordings of all catch components, including BMS and fish that are discarded, for example under the de minimis exemptions.</p>
Justification	<p>The landing obligation will introduce a new category of landed fish below minimum conservation reference size (BMS) and this fraction of the catch will require to be estimated. This necessitates that within national institutions and ICES all stages of the recording, storage and estimation processes are able to accommodate this fraction.</p> <p>Many national IT systems may have data models based on a distinction between landed and discarded data that will require modification to accommodate the BMS fraction. Routines to estimate national catch compositions for length and age for assessed stocks will need to be adjusted. The ICES InterCatch system and the regional data base may be similarly affected.</p>
Follow-up actions needed	Scientific institutions and ICES data centre to consider if present systems are appropriate and if not make the required modifications.
Responsible persons for follow-up actions	<p>Scientific institutions within MS & ICES</p> <p>National and EU authorities</p>
Time frame (Deadline)	<p>As soon as possible as the landing obligation already is in place in some areas and for some species.</p> <p>For InterCatch/RDB prior to data calls for 2015 data.</p>

Age determination in stocks where age is not used in assessments	
RCM NS&EA 2015 Recommendation	RCM NS&EA recommends that the Liaison Meeting (LM) discusses and suggest a decision making process on how to deal with requirements on age determination for stocks where age is not used in the assessment due to poor agreement between age readers.
Justification	<p>Many Member States undertake the task of determining the age of fish stocks e.g. anglerfish (<i>Lophius sp</i>) for which the age determinations is not used in the assessment due to poor agreement between readers. In the present situation all MS make, in lack of guidance, their own judgement if age determination should be kept or not. There need to be some kind of guidance to MS on how to act in those situations and the responsible body to give this guidance need to be identified.</p> <p>The collection of material (e.g. otoliths) should of course continue as long as it is a requirement in DCF.</p>

Follow-up actions needed	LM members to discuss and reach an agreement.
Responsible persons for follow-up actions	Liaison meeting 2015
Time frame (Deadline)	2015

Annex 2. Agenda for the RCM NS&EA 2015

Regional Co-ordination Meeting for the North Sea and Eastern Arctic Den Haag, 31 August – 4 September, 2015

Venue: 7 AM Den Haag, Buitenhof 47, 2513 AH DEN HAAG

Co-Chairs : Katja Ringdahl, Alastair Pout

Participants :

Scientific Institutions

SLU AQUA	Katja Ringdahl, Sofia Carlshamre
MSS	Alastair Pout, Phil Kunzlik , Margaret Bell
CEFAS	Jon Elson, Wendy Dawson
DTU AQUA	Marie Storr-Paulsen, Jørgen Dalskov
IFREMER	Joel Vigneau, Kelig Mahe
IEO	Jose Lorenzo
ILVO	Sofie Nimmegeers, Els Torreele
ZUV	Romas Statkus, Jurate Andriukaitien
WUR	Sieto Verver, Harriet van Overzee
IPIMAR	Ricardo Alpoim (by Correspondence)
TI-SF	Christoph Stransky, Jens Ullewiet (by Correspondence)

ICES

ICES Henrik Kjems-Nielsen, Scott Large

Commission

EU Bas Drukker (by correspondance), Edgars Goldmanis

National Correspondents

UK -	Matt Elliott
FRA –	?
DEU –	Christoph Stransky
ESP –	María Moset Martínez
NLD -	Kees Verbogt, Inge Jannsen
DNK -	Jørgen Dalskov
SWE –	Anna Hasslow
PRT -	?
LIT -	Vilda Griniene
BEL –	Els Torreele

Agenda (draft)

Monday 31st August

14:00 – 18:00

Tuesday 1 st September	09:00 – 18:00
Wednesday 2 nd September	09:00 – 18:00
Thursday 3 rd September	09:00 – 18:00
Friday 4 th September	09:00 – 13:00

Lunch 12:30 -14:00

Breaks 10:30-11:00, 15:30-16:00

Subgroups

- 1) **Regional data collection (ToR 3b, 3d, 3e, 3f and 9)**
- 2) **Landing obligation (ToR 7a-f)**
- 3) **National Administrations (ToR 8a-e)**

Draft Work Plan

Monday, 31th August 2015

14.00 : Plenary session:

Welcome, introduction of the participants, organization & house rules, adoption of the agenda and appointment of subgroups & rapporteurs.

ToR 1:

Review progress since 2014 following up the 11th liaison meeting report.

ToR 2:

Review feedback from end users, and expert groups, to include: WGCATCH 2014 (**Romas**) , RDB SC (**Katja**), WKRDB 5 (**Alastair**), PGDATA (**Rie**), STECF (**Sophie**), WKISCON2 (**Jon**), WK on transversal variables (**Jörgen**), NC meetings (**Bas**). *(All write a piece of the text for the report)*

18.00 End of the day

Tuesday, 1st of September 2015

09.00: Plenary session:

ToR 2: continued ICES (Scott)

- Get feedback from National Correspondents / data submitters on the 2015 data call for update assessments – discussion and input from RCM members (**Scott**)
- Overview of 2016 benchmarks / 2015 data compilation workshops: provide a list on the main issues for each stock (**Scott**)

ToR 3a: Consider the progress of the “strengthening regional cooperation in data collection” mare/2014/19, and possible implications. (**Alastair**)

ToR 3c: Consider the role of the sampling data format in terms of integration of sampling data collection, recording and the present and future RCM data calls. **(Katja)**

Introduction in plenary to sub-group work

Sub-group 1 – Regional data collection (Introduction **Alastair – Joel** to be chair for the subgroup)

Sub-group 2 – Landing obligation (Introduction **Katja – Phil** to be chair of the subgroup)

Presentation by **Jörgen** on experiences from the landing obligation in the Baltic

11.00: Sub-group work:

Subgroup 1 chaired by Joel (people in brackets below are responsible for text in the report)

ToR 3b: Review progress in data quality screening, harmonisation of national and regional data checking procedures **(Joel)**.

ToR 3d: Consider the data collection protocols for at-sea and on-shore sampling in the context of regional sampling designs and probability selection methods **(Els)**

ToR 3e: Discuss design-based sampling: state of play of which MS are using it or plan to use it. **(Els)**

ToR 3f: Analyse the RCM data call for the RDB 2014 data **(Sophie, Sofia, Joel, Kelig, Wendy, Jose...)**.

ToR 9 : Discuss the role of metiers in sampling and estimation, as descriptors of fishing, as domains for estimation and their merging in the InterCatch, the RDB and the STECF data base and as an aide to sampling. Define how they are to be used in the future, the extent to which national and regional lists need to be harmonised and how lists are to be stored for use in a regional context. **(Sieto)**

Subgroup 2 chaired by Phil (people in brackets below are responsible for text in the report)

ToR 7: Landing Obligation.

- a) **Evaluate the impact of the introduction of the landing obligation, and/or preparations for its implementation. (Jon)**
- b) **The operation of at-sea observer programmes, and role of scientific observers. (Christoph)**
- c) **Quality and integrity of catch data collected by the control agencies, i.e. logbook sales notes data. (Rie)**
- d) **The generation of catch estimates derived from sampling programme data. (Rie)**
- e) **Experiences of on-shore sampling of landed discards. (Irek)**
- f) **Review progress from last year's recommendation on landing obligation. (Irek)**

17: 00 Plenary session

Subgroups to report back to plenary

18.00 End of the day

Wednesday, 2nd of September 2015

09:00: Plenary

ToR 2: Feedback from ICES; ICES clarification on the data transmission 2014 (**Scott**)

Agenda point outside the ToR: Presentation of the status of the DC-MAP (**Jørgen**)

Discussion on the proposal for the a new DC-MAP

Agenda point outside the ToR: Presentation on the EFARO/ICES process on survey evaluation (**Jørgen**)

ToR 4: Review proposal for task sharing and criteria for joint surveys. (**Jørgen**)

ToR 10a: Propose list of research surveys that should be carried out in the region in 2016. (**Jørgen**)

Introduction in plenary to sub-group 3 work (subgroup 3 consists of all NCs) (Introduction **Jørgen** – **Christoph** to be chair of the subgroup)

Sub-group work (incl new subgroup 3):

Subgroup 3 chaired by Christoph (people in brackets below are responsible for text in the report)

ToR 8a: Address any issues relating specifically to national administrations and consider the role of NC within the RCM RCG context. (**Christoph**)

ToR 8b: Harmonisation of control agency data collection, and the cross border sharing of control agency data, for vessels operating and landing outside their flag country. (**Vilda**)

ToR 8c: Harmonisation of catch data recording e.g. metiers. (**Anna**)

ToR 8d: The position of national administrations on populating the Regional Data Base according to the RCM data call with i) Landings and effort data and ii) Sampling data. (**Kees**)

ToR 8e: Task sharing and task trading mechanisms that might operate within the context of a regional sampling designs. (**Matt**)

14:00: continue subgroup work

17.30: Plenary: Subgroup 3 to report back to plenary

18:00: End of the day

Social event

Thursday, 3rd of September 2015

09:00: Plenary: Subgroup 1 and 2 to report back to plenary

10:00: Subgroup work – end subgroup work 12.30

14:00: Plenary

ToR 3g: Identify the areas and topics where there is a need for intra-institute intersessional work to achieve coordinated sampling, and how such groups can be organised, coordinated, and funded e.g. joint surveys, sampling plans for MSFD variables, data quality scrutiny groups, international sampling frames (**Sieto**).

ToR 6: Consider future funding mechanisms to continue strengthening regional cooperation. (**Rie**)

18:00: End of the day

Friday, 4th of September 2015

9.00: Plenary session

ToR 5: Identify any amendments to NP needed in 2016. (**Jørgen**)

ToR 10b: Review and comment on ICES advice on what data are necessary for scientific advice regarding recreational fisheries. (**Jon**)

ToR 10c: Review and comment on list of proposed stocks & biological variables to be included in EU MAP (**Els**).

11.00 – 13.00 : Plenary session

- ➔ Report assemblage and finalisation of agreements and recommendations.
- ➔ Election an appointment venue and date of the next RCM/RCG NS&EA

Closure of the meeting

Annex 3: Legislative framework (or “What is an obligation?”)

Report of the Regional Co-ordination Meeting for the North Sea and Eastern Arctic (RCM NS&EA) 2014

“Legislative framework (or “What is an obligation?”)

During 2013, STECF EWGs on the future DCF were presented with a Commission view that a proposed document, the master reference register (MRR), held and updated by RCMs and which identified Member State sampling ‘obligations’, would not have legal authority. This was because it was not a specific Commission legal text. Consequently, the legal authority of, for example, Liaison Meeting or STECF recommendations was questioned. Without clarity on this, the whole question of “what comprises an obligation?” was raised.

RCM participants are not legal experts and are keen to understand better their legal obligations under a new EU MAP, but without resorting to an unnecessarily detailed, point-by-point and prescriptive legal text. For ‘recommendations’ made by RCMs or STECF that may apply to a Member State’s work programme, comment was made on the apparent ‘indirect’ obligation of Member States whereby in Commission Regulation 665/2008, articles 2 and 5, reference is made to Member States’ requirement to observe: “the templates and guidelines established by STECF with regard to the technical and scientific aspects of the programme”, in which the guidelines indicate that Member States should “List the appropriate recommendations from all relevant RCMs and give a brief description of the responsive actions that will be taken”. It is not immediately apparent that this obliges a Member State to fulfil the terms of the recommendation; only that it should describe its response which could, of course, be to consider the recommendation and to decide to take no action upon it.

RCM NS&EA recognises the tension that exists between the desire to avoid unnecessarily prescriptive and highly detailed legal texts and the need to ensure that Member States undertake the necessary data collection both for that data collection to be proportionate and to encompass flexibility where it is needed. RCM NS&EA proposes the following:

- For EU MAP to follow the approach advocated by STECF (STECF-14-07) whereby: “The current highly prescriptive requirements of the DCF regarding sampling size have resulted in both under and over-sampling of data. STECF observes that there is a need to increase the flexibility in the sampling methodology and sample size by delegating decisions on sampling levels to the regional level. The STECF therefore considers that a move towards a model with greater delegation to Regional Coordination Groups (RCGs) and PGECON, leaving key aspects (species, variables and periodicity) at the EU level, is desirable”;
- Within the constraints of this, the “greater delegation to RCGs” would entail both agreements and recommendations to be considered. RCM NS&EA proposes that ultimately, recommendations made by the RCMs and / or STECF should be considered by the relevant Member States’ National Correspondents (in consultation with their national agencies that undertake data collection) with the aim of reaching agreement between Member States on the actions necessary to fulfil such recommendations and for those agreements to be binding. Where agreement cannot be reached, for the RCM to advise the Commission of such a failure and for the Commission thereafter to consult with the STECF on whether the recommendation merits inclusion in a revised legal instrument (e.g., Commission Decision) that obliges Member States to fulfil the particular activity.
- For recommendations to adhere to a best practice guidelines and template, outlining the recommendation, its justification and priority (based on relevance, complexity and importance) and the consequence of non-compliance (such a template and guidelines would need to be developed as a part of the roadmap).
- For RCM reports to maintain separate annexes of agreements (binding upon Member States) and recommendations (non-binding, but subject to review and possible legal implementation as described above).

This approach comprises a pragmatic means to avoid the likelihood of a ‘blank cheque’ approach to the creation of obligations upon Member States and may also have the advantage of concentrating minds on what it takes to develop a considered and well-thought-out recommendation.

(NB. elements of this approach are derived from earlier discussion in STECF EWGs on the proportionate financial contribution that should be made by non-participating Member States in specific research vessel surveys, whereby agreement on such funding would be sought within RCMs but with a fall-back position for the Commission to enact its own decision according to set principles).”

Annex 4: RDB – upload logs

Data upload for the data call for the 2014 data

UniqueID	Datacall	RCM	Member State	Date	Data Type	Table	Full upload	If No then reason	Sampling_type	Field	Issue	Background	Action	Responsible	Status
Unique number	List	Free text		List	List	List	List	List	List		Why is the data not completely uploaded? What data was not able to be uploaded?	The reason why this data could not be uploaded, but should be uploaded	What needs to be done?	By whom does this need to be done?	List
	2015	NS&EA	PT	30/07/2015	CS	HH	No	Procedural	S	Area	Area codes are not consistent between FAO_21 and FAO_27. Data were not uploaded.	This issue has been previously mentioned in 2013 and 2014.	Full validation of Area lookup table should be ensured.		
	2015	NS&EA	PT	30/07/2015	CS	HH	No	Procedural	S	Pos.start.lon.dec / Pos.stop.lon.dec	FAO_21 coordinates missing in Fishframe lookup table. Complete data on trips registering hauls in these areas cannot be uploaded.	This issue has been previously mentioned in 2013 and 2014.	New coordinates should be added to Fishframe in order to fulfil all the areas mentioned in Area's table.		
	2015	NS&EA	PT	30/07/2015	CS	HH	No	Statistical rectangle missing	S	Statistical rectangle	Following WKROB 2013 1 instructions, there is an imputation rule for unknown statistical rectangles: "99u9". However, "99u9" is not available for FAO_21 areas.	This issue has been previously mentioned in 2013.	"99u9" should be available for FAO_21 areas.		
	2015	NS&EA	PT	30/07/2015	CS	SL	No	Missing values not allowed	S	Weight	Portugal does not collect weight as raw data. Therefore needs to calculate the required values before upload, but overall it could lead to misunderstandings when calculated values are treated as raw data. Data were not uploaded.	This issue has been previously mentioned in 2013 and 2014.	In order to provide data, Weight should be optional in this case or some code should be added.		
	2015	NS&EA	PT	30/07/2015	CS	SL	No	Length codes missing	S	Length code	Some species are not measured strictly according to the available length codes (mm, scm, cm). There are species measured in 2cm and 3 cm. Data on these species were not uploaded.	This issue has been previously mentioned in 2013.	Length codes need to be added.		
1	2015	NS & EA	BE	28/07/2015	CL	All	Yes								
2	2015	NS & EA	BE	28/07/2015	CE	All	Yes								
5	2015	NS & EA	BE	28/07/2015	CS	CA	No	Technical	D	Maturity staging method, Maturity scale, Maturity stage	No maturity data (only available from the market sampling of mixed trips) were uploaded	The maturity data are temporarily not available due to upgrading of our national database	/	/	/
1	RDB	NSEA	Estonia	31/07/2015	CS	All	No	Technical	S		NAFO area 30 does not have statistical rectangle so the rectangle data was not uploaded.		Decide weather areas that are outside ICES statistical rectangles system should be uploaded. At the moment 99u9 was used.		
	RDB	NSEA	Estonia	31/07/2015	CL		No		S		Species Chionoecetes opilio missing from species coding list				
	RDB	NSEA	Estonia	31/07/2015	CL		No		S		Metiere OTB_CRU_40-59_0_0 not accepted in RDB.	Maybe NAFO area is put under RCM_NA but the correct is RCM_NSEA			
	RDB	Baltic	Estonia	31/07/2015	CE		No		S		Costal fishery effort (trips, days at sea etc)				
	RDB	NSEA	Estonia	31/07/2015	CL						Metieres OTB_DEF_130-219_0_0, OTB_DEF_>=220_0_0, OTB_CRU_40-59_0_0 in NAFO area were excluded from uploaded file. The metiers submitted are not allowed for the imported area(s).	In file 'Metiere_FishPi' these metieres correspond to NAFO areas and RCM_NSEA.			
	RDB	NSEA	Estonia	31/07/2015	CE						Metieres OTB_DEF_130-219_0_0, OTB_DEF_>=220_0_0, OTB_CRU_40-59_0_0 in NAFO area were excluded from uploaded file. The metiers submitted are not allowed for the imported area(s).	In file 'Metiere_FishPi' these metieres correspond to NAFO areas and RCM_NSEA.			
	RDB	NSEA	Estonia	31/07/2015	CS	All	No		S		Sampled metieres OTB_DEF_130-219_0_0 and OTB_CRU_40-59_0_0 were excluded from upload because of the error 'The metiers submitted are not allowed for the imported area(s)'	In file 'Metiere_FishPi' these metieres correspond to NAFO areas and RCM_NSEA.			
1	2014	NS & EA	Scotland	31/07/2015	CS	All	No	Choice	S	Species	None of Scallops ("Pecten maximus") and Jun - Dec 2014 of LOB("Homarus gammarus") and CRE("Cancer pagurus") data were uploaded as national data were not ready.	-	-	-	Open
GBEW1	2015	NA & NSEA	England and Wales	13/07/2015	CS	TR, HH, SL, HL	No	Procedural	M	All	15 Length samples excluded.	Size categories observed and not measured.	DB format change?		Open
GBEW2	2015	NA & NSEA	England and Wales	13/07/2015	CS	TR, HH, SL, HL	No	Procedural	M	All	16 Length samples excluded.	Skates and rays samples which include different presentations in the same category.	DB format change?		Open
GBEW3	2015	NA & NSEA	England and Wales	13/07/2015	CS	TR, HH, SL, HL	No	Procedural	M	All	10 Length samples excluded.	Incomplete or invalid	Nothing to be done	N/A	Resolved
GBEW4	2015	NA & NSEA	England and Wales	16/07/2015	CS	TR, HH, SL, HL	No	Procedural	M	All	152 Length samples excluded.	Disallowed metiers. Usually in relation to a default metier not being allowed, when the mesh size is not available or not accounted for or the gear is unknown - usually NSEA metiers.	Improve on Metier list	RCGs	Open

UniqueID	Datacall	RCM	Member State	Date	Data Type	Table	Full upload	If No then reason	Sampling_type	Field	Issue	Background	Action	Responsible	Status
Unique number	List	Free text		List	List	List	List	List	List		Why is the data not completely uploaded? What data was not able to be uploaded?	The reason why this data could not be uploaded, but should be uploaded	What needs to be done?	By whom does this need to done?	List
GBEW5	2015	NA & NSEA	England and Wales	14/07/2015	CS	TR, HH, CA	No	Procedural	M	All	10 age samples excluded.	Associated length samples excluded see GBEW1, 2 and 3 above.	GBEW1, 2 and 3 above	GBEW1, 2 and 3 above	Open
GBEW6	2015	NA & NSEA	England and Wales	14/07/2015	CS	TR, HH, CA	No	Procedural	M	All	25 age samples excluded.	Ages collected but not currently aged. No ageing procedures or ages not required.	Agreed procedures required or whether necessary.	RCGs and EGs	Open
GBEW7	2015	NA & NSEA	England and Wales	14/07/2015	CS	CA	No	Procedural	M	All	231 fish excluded.	Age could not be determined due to poor quality of source material. Our default is 999.	Is this data required? If so the RDB needs to accept them.	RCGs and EGs	Open
GBEW8	2015	NA & NSEA	England and Wales	16/07/2015	CS	CA	No	Procedural	M	All	114 age samples excluded.	Associated length samples excluded in relation to metiers see GBEW4 above.	Improve on Metier list	RCGs	Open
GBEW10	2015	NA & NSEA	England and Wales	31/07/2015	CE	CE,CL	No	Procedural	N/A	All	501 lines of landings and associated effort data excluded.	Disallowed metiers. Usually in relation to a default metier not being allowed, when the mesh size is not available or not accounted for or the gear is unknown - usually NSEA metiers.	Improve on Metier list	RCGs	Open
1	2014	NA, NS & EA, Baltic	IRL	31/07/2015	CS	All	No	Procedural	S	Catch_category	Nephrops are sampled from the catch, however the catch categories only allow L (landings) or D (discards). Therefore most Nephrops data could not be uploaded	It should be uploaded because the datacall asks us to do so	Add a third option (Catch) to the catch category field	RDB	Open
2	2014	NA, NS & EA, Baltic	IRL	31/07/2015	CE	CE	Yes								
3	2014	NA, NS & EA, Baltic	IRL	31/07/2015	CL	CL	Yes								
	2014	NA, NS & EA, Baltic	IRL	31/07/2015	CE	CE				kW_days	The data call does not specify whether kWdays refer to fishing days or days-at-sea, we used fishing days. It is also not specified how to deal with vessels that have effort in more than one rectangle or metier in a day - should each rectangle be assigned a fishing day? Should the effort be allocated pro rata? We chose to assign a full fishing day to each effort record. Note that it is not possible to provide days-at-sea by rectangle as this is not recorded in the logbooks		Clarify the datacall. Note that it is a bit silly to ask for effort in days at the spatial resolution of ICES rectangles as most vessels fish in more than one rectangle each day.	RCM chairs	
	2014	NA, NS & EA, Baltic	IRL	31/07/2015	CE	CE				Number_of_trips	The number of trips were assigned according to the rectangle with the greatest effort as requested, note that this method of assigning leads to a number of rectangles with 0 trips. The upload functionality would not allow upload of 0 trips, so these were changed to 999.		Reconsider the need for number of trips by rectangle or change the definition so that a fraction of a trip can be assigned to each rectangle that trip has effort in.	RCM chairs	
	2014	NA, NS & EA, Baltic	IRL	31/07/2015	CL	CL				Official_Landings_weight	The data call asks for landings in tonnes, however the data exchange format definition specifies the landings in kg. The data exchange format definition was followed		Clarify the datacall.	RCM chairs	
	2014	NA, NS & EA, Baltic	IRL	31/07/2015	CL	CL				Statistical_Rectangle	Landings were not extracted by statistical rectangle because reliable landings are not always available at this level.		Reconsider the need for landings by rectangle.	RCM chairs	
	2014	NA, NS & EA, Baltic	IRL	31/07/2015	CL	CL				Landing_category	The landing category (human consumption / industrial) is not recorded in the logbooks, all landings were assigned to "HUCC"		None		
	2014	NA, NS & EA, Baltic	IRL	31/07/2015	CE, CL	CE, CL				FAC_EC_lw6 and area	The database checks that certain metiers are only allowed in certain areas. Because no-one told the fishermen this, they might use a certain metier in a certain area that the database doesn't like. We had to 'adjust' a large number of metiers in order to pass this validation.		Relax the metier/area validation	RDB	
	2014	NA, NS & EA, Baltic	IRL	31/07/2015	CS	SL				Weight, Subsample_weight	Sample weights are inferred from length-weight relationships.		None		
	2014	NA, NS & EA, Baltic	IRL	31/07/2015	CS	HH				FAC_EC_lw6	Not all samples could be matched to a metier.		None		
	2014	NA, NS & EA, Baltic	IRL	31/07/2015	CL	CL				FAC_EC_lw6	The under-10m landings could not be assigned metiers as no logbook records of trip level information is available. These were uploaded as MIS_MIS_0_0_0 as the No_logbooks option generated upload errors.		None		
	2014	NA, NS & EA, Baltic	IRL	31/07/2015	CE	CE				Number_of_trips FishingSoaking_time kW_days GT_days Days_at_sea	Under 10m effort could not be provided as no logbook records of trip level information is available.		None		
	2014	NA, NS & EA, Baltic	IRL	31/07/2015	vessels						Not all sampled vessels could be matched to the vessel register, therefore some vessel attributes are unknown.		None		
	2014	NA, NS & EA, Baltic	IRL	31/07/2015	vessels						Irish vessels often switch between gears, so a demersal trawler might switch to being a pelagic trawler during some months of the year. Therefore there is a column in the spreadsheet that gives the main gear from the logbooks and an additional column with the main gear from the eu fleet register (they are not always the same)		None		